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ABSTRACT

The first volume of the 1990 progress report of the Regents' 1988 New York statewide plan for postsecondary education development is presented. An introductory chapter focuses on recent trends in the financing of higher education, recent enrollment trends, and the implications of new enrollment projections. All amendments to institutional master plans since November 1, 1988, and the status of actions and recommendations proposed by the Regents in the 1988 plan are included, along with information on the general progress made toward the four major issues: (1) assuring full participation in society for all New Yorkers; (2) enhancing the quality of life for New York State residents; (3) assisting in the economic resurgency of New York State; and (4) using resources effectively. Four subsequent chapters examine the actions taken by New York's colleges and universities, the State Education Department, the Governor and the Legislature in relation to each issue area. Issues for the development of the 1992 statewide plan are also identified. Specific concerns include: campus climate; accountability for students' education; research and development; access to education for minority groups; college costs; and the decline in enrollment of disadvantaged students. Included are 26 tables and 42 figures. (LPT)

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THE REGENTS 1990 PROGRESS REPORT

on

The Regents Statewide Plan for the Development of Postsecondary Education in New York State

VOLUME I

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The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Albany, New York 12230

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The Regents Statewide Plan for the Development of Postsecondary Education

in New York State 1988

The University of the State of New York

THE STATE EDUCATION DEPARTMENT

Albany, New York 12230

October 1990

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Regents of The University

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MARTIN C. BARELL
CHANCELLOR

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October 19, 1990

To the Governor and the Legislature of the State of New York:

On behalf of The Regents of The University of the State of New York I am happy to transmit to you a report on the progress that New York's 244 public, independent, and proprietary colleges and universities have made in relation to the issues we set forth in The Regents Statewide Plan for the Development of Postsecondary Education 1988. Those issues were Assuring Full Participation in Society for All New Yorkers, Enhancing the Quality of Life for New York State Residents, Assisting in the Economic Resurgence of New York State, and Making the Most Effective Use of Resources.

The two years since we adopted the 1988 Plan have been a period of significant fiscal constraint for the State government. During that time State support for higher education has not kept pace with inflation. We estimate that it would cost an additional $425 million in the 1991-92 State fiscal year to restore the level of State support to that of 1987-88. While we recognize that full restoration may not be possible in 1991-92 given the State's fiscal condition, we believe it is necessary to begin to reverse the downward trend in funding. We have proposed to the Legislature a comprehensive set of bills that would, if enacted, significantly advance our Plan in relation to economic development, access for members of underrepresented minority groups, and assuring an adequate supply of well-prepared faculty for our colleges and teachers for our schools. Since these proposals have not been enacted, in this Progress Report we are focusing on recent actions taken by our colleges and universities and other changes to New York's higher education system.

As this report demonstrates, during the past few years colleges and universities have continued efforts to provide education and carry out research that strengthens New York's economy and society, to recruit and educate undergraduate and graduate students from underrepresented minority groups, and to collaborate with one another, with elementary and secondary schools, and with other segments of our society to address the needs of all New Yorkers. In addition, they have given a new emphasis to assuring that their campuses provide a civil environment that encourages learning and to addressing the problems of racial/ethnic bias, alcohol and drug abuse, and crime on campus.

We are now at the midpoint of the planning period addressed in the 1988 Plan. We continue to be committed to the policies we set forth in the Plan and the actions it proposes. At the same time, we must begin the process of identifying the needs and issues for the mid-1990's that must be addressed by New York State and its higher education institutions. These issues will serve as the foundation of the 1992 Statewide Plan.

Respectfully submitted,

Martin C. Barell

Martin C. Barell
CHANCELLOR

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CHAPTER I

INTRODUCTION

Section 237 of Education Law sets forth the Board of Regents responsibilities for preparing a quadrennial statewide plan for the development of higher education every four years. Two years after the plan is submitted to the Governor and the Legislature, the Regents are required to report on the progress that colleges and universities, the Executive, the Legislature, and other key players have made in reaching the goals and implementing the recommendations and policies laid out in the plan. This document is the Progress Report on the Regents Statewide Plan for the Development of Postsecondary Education in New York State 1988.

This report says less about actual progress than some others have. The reason is simple. The recommendations in the 1988 Statewide Plan basically were of two types: those which required additional legislation and State fiscal resources and those which required longer than two years to implement, such as increasing the number of minority students and faculty. Since 1989 no legislation committed significant new State fiscal resources for higher education. Therefore, the Progress Report describes the status of activities in the areas of the recommendations set forth in 1988, notes where there has been progress or where situations have grown worse, and introduces concerns that have emerged since 1988: campus climate, which refers to factors that make a campus less conducive to learning -- racism, crime, and drug and alcohol abuse; the significant decline in the number of full-time, first-time students which will cause a large enrollment decline in the short run, the continuing decline in the number of Black students at all levels despite efforts by the State and institutions to reverse the decline; the continuing decline in the number of students pursuing degrees in science and technology; and the continuing rise in the cost of higher education. An initiative receiving increased attention in all sectors is the provision of more opportunities for transfer students and adult learners. These topics will be discussed in this report.

In the 1988 Statewide Plan for the Development of Postsecondary Education in New York State, the Regents focused on actions through which New York State and the public, independent, and proprietary colleges and universities in The University of the State of New York could address the challenges posed by four issues:

- **Assuring Full Participation in Society for All New Yorkers**
- **Enhancing the Quality of Life for New York State Residents**
- **Assisting in the Economic Resurgence of New York State**
- **Making the Most Effective Use of Resources**

Subsequent chapters of this Progress Report examine the actions taken by New York's colleges and universities, the State Education Department, and the Governor and the Legislature in relation to each issue area. In this Introduction, attention is directed to recent trends in the financing of higher education, recent enrollment trends, and the implications of new enrollment projections.

Recent Trends in the Financing of Higher Education

Total current fund expenditures (and mandatory transfers) by all higher education institutions in The University of the State of New York grew by $3.9 billion (78.5 percent), between 1980-81 and 1987-88 (the most recent year available), from $4.9 billion to $8.8 billion (see Table 1, below). State support for higher education grew more slowly, from $1.8 billion to $3.1 billion, an increase of 75.5 percent ($1.3 billion). Consequently, State funds for higher education as a proportion of higher education expenditures declined slightly, from 36.3 percent in 1980-81 to 35.7 percent in 1987-88.

At the same time, New York State's revenues grew by 91.3 percent during this period, from $14.0 billion to $26.7 billion. This was more than 2.5 times as great as the 33.7 percent growth in the Consumer Price Index (CPI), and almost twice as great as the 47.7 percent growth in the Higher Education Price Index (HEPI), which measures changes in the costs to colleges and universities of doing business. The percentage of total State revenues spent on higher education declined, as a result, from 12.7 percent in 1980-81 to 11.7 percent in 1987-88. However, when measured against full-time equivalent enrollments (FTE), which declined by 1.5 percent during this period, State support per FTE increased by 78.2 percent, well over either inflation indicator but well below the growth in State revenues. That increase is inflated by the cost of the State takeover of financing the senior colleges of The City University of New York, which was not completed until fiscal 1982-83. Even allowing for that, however, the increase in State support per FTE was greater than the increase in the Higher Education Price Index.

Tuition levels at the State University of New York and The City University of New York have not increased since 1983-84 (except at SUNY community colleges) while increases in tuition and fees at independent institutions continued throughout this period (see Table 9 in Chapter II, below). The average increase at independent institutions was 97.6 percent, nearly three times the CPI and almost twice the HEPI change. At independent institutions, Student-Related Educational (SRE) expenditures (a broad indicator of the institutional cost of education, including all instructional, academic support, and student services costs as well as a proportion of institutional support and operation and maintenance of plant) increased nearly as much -- 87.5 percent for the period -- which was slightly more than the rate of increase at State University and City University.

The causes of increased operating costs at each institution may be uniquely related to its circumstances. Public and independent colleges and universities are not in business to make a profit. Rather than being driven to maximize profits, they are driven to maximize services -- teaching, research, public service -- to their clienteles. To do so, they seek to hire as many of the best faculty as they can, buy more books for the library and equipment for laboratories, take more steps to assure campus security and safety, and take other measures that strengthen the services their missions call for. To do this, each institution seeks to use for these purposes all the resources available to it; in turn, it seeks to raise as much as it can in income it can devote to its services. For most independent institutions, the single largest source of resources is income from tuition and other student charges.

Because of these circumstances, analyses of aggregate expenditures by "similar" groups of institutions may not reveal true causes of cost increases. At present, the Department annually reports on Fiscal Indicators for Postsecondary Education in New York State. That report in-

TABLE 1
SELECTED FINANCIAL DATA RELATED TO HIGHER EDUCATION, NEW YORK STATE 1980-81 AND 1987-88

	1980-81	1987-88	Percent Change
Total Higher Education Current Fund Expenditures (including Mandatory Transfers):	$4,925,107,000	$8,791,347,000	78.5%
New York State Funds for Higher Education:	$1,786,000,000	$3,135,000,000	75.5%
Total New York State Revenues:	$13,966,000,000	$26,714,000,000	91.3%
Consumer Price Index:	86.6	115.8	33.7%
Higher Education Price Index:	85.5	126.3	47.7%
State Funds for Higher Education per Full-Time Equivalent Student:	$2,391	$4,260	78.2%
State Funds for Higher Education/ Total State Revenues:	12.7%	11.7%	--
Education Current Fund ExpendiState Funds for Higher Education/Total Higher tures:	36.3%	35.7%	--

cludes analyses of expenditures by groups of institutions. The report's principal purpose is to provide comparable standardized data on revenues and expenditures over time and among groups of institutions. The Department will continue to issue its Fiscal Indicators report. It may, however, be appropriate for the Department to do separate "case study" analyses to address the factors underlying increased cost of operation of colleges and universities.

State support for higher education has been affected profoundly by changes in the State's financial condition caused, in part, by ripple effects from the 1986 Federal tax reform. Although comprehensive expenditure data are not yet available for 1988-89 and subsequent years, a reasonably accurate picture of changes in State support can be drawn by comparing State appropriations for higher education programs using 1987-88 as the base year. If the $3,224 million 1987-88 appropriation is inflated by 4.1 percent per year (the average CPI change from 1987-1990), a projection of $3,637 million results for fiscal 1990-91. That is $278 million more than the actual 1990-91 appropriation of $3,359 million. In order to return to previous (1987-88) levels of State support for higher education in 1991-92, an increase in State revenues of more than $425 million would be needed ($278 million plus an additional year's inflation adjustment).

In the context of continued State economic difficulties, an increase of that magnitude will be difficult. It may take several years to return higher education to its former ranking among the State's priorities. In the interim, the Liberty Scholarship program will be implemented and a dialogue about the State's public university tuition policy will occur. In the absence of regular tuition increases for SUNY State-operated campuses and CUNY, the disparity between tuition levels at public and independent colleges has grown substantially. Tuition and fees support less than 20

percent of SRE expenditures at SUNY State-operated campuses compared to an average of more than 80 percent at independent colleges. Until the tuition issue is resolved and the State's economy improves enough to allow increases in funding for State higher education programs, the management, faculty, and staff of colleges and universities will be challenged to increase efficiency while maintaining quality. No long-term decline in enrollments is projected for higher education in New York. As shown in the next section, enrollments will decline only through 1994. After that, they are expected to increase at least through 2005. Therefore, after 1994 the only way to increase State funds per FTE will be by increasing total State funds for higher education.

Enrollments

Over the past two decades, enrollment in New York's colleges and universities grew substantially despite a continual decline in the number of high school graduates since the mid-1970s. While the number of high school graduates declined by about 22 percent between 1970 and 1989, total enrollment in New York State's higher education system grew by about 31 percent, from about 764,000 to just over 1,000,000 students. The primary reason for the increase in postsecondary enrollment was the substantial increase in the college going rate during this period. Between 1976 and 1989 that rate increased by over 20 percent (see Figure 1). In 1998-89, almost 78 percent of New York State's high school seniors planned to enroll in some form of postsecondary education, 59 percent in New York colleges and universities, almost 3 percent at New York non-degree institutions, and over 16 percent in other states. Recent enrichments in the Tuition Assistance Program and introduction of the new Liberty Scholarship program may help to reduce, in the future, the share of seniors who plan to go to an out-of-state institution.

After a period of substantial growth, New York State's higher education enrollments more recently have experienced brief periods of decline and expansion. Total enrollment first peaked in 1983 at just over 999,000 students. From 1983 to 1987 enrollments declined, reaching 970,000 in 1987. In 1988 and 1989, total enrollment again increased and for the first time reached 1,000,000 students in 1989 (see Table 2). Full-time undergraduate enrollment trends during this period have shown a similar pattern, growing by 30 percent between 1970 and 1983 and then declining by more than 6 percent between 1983 and 1987, followed by two years of growth in 1988 and 1989 (Figure 1). In 1989 full-time undergraduate enrollment reached just over 550,000 students, up almost 15,000 from 1987.

While total enrollment and full-time undergraduate enrollment experienced a resurgence in the past two years, full-time first-time undergraduate enrollment has experienced an almost uniform decline since the 1981 peak of almost 165,000 students. By 1989 full-time, first-time enrollments had declined to just over 144,000 students, a 12.6 percent decline from 1981.

One reason for the lack of a sharp decline in total enrollment despite substantial declines in the number of full-time, first-time students is the steady increase in part-time undergraduate enrollment over the past 20 years. Between 1980 and 1989 part-time undergraduate enrollment increased by 24,000 students (ten percent). Increases in continuation rates at New York's higher education institutions over the past decade also had a moderating effect on declines in total and full-time undergraduate enrollments (see Figure 2). At two-year institutions those rates increased by about 11 percent between 1984 and 1989 and by about the same percent for upper division students at four-year institutions. Continuation rates for lower division students (freshmen and sophomores) at four-year institutions have remained basically the same over this period.

Although continuation rates increased over the past decade, it does not follow that graduation rates also increased. Continuation rates basically measure the number of students present at various points in time at institutions, not the number or rate graduating. If students take longer to graduate, continuation rates would increase while

the percentage of students who graduate would remain the same. This is largely what has been happening in New York's colleges and universities. Figure 3 shows that graduation rates over the past decade have basically remained stable at New York's four-year institutions, while actually declining at New York's two-year institutions.

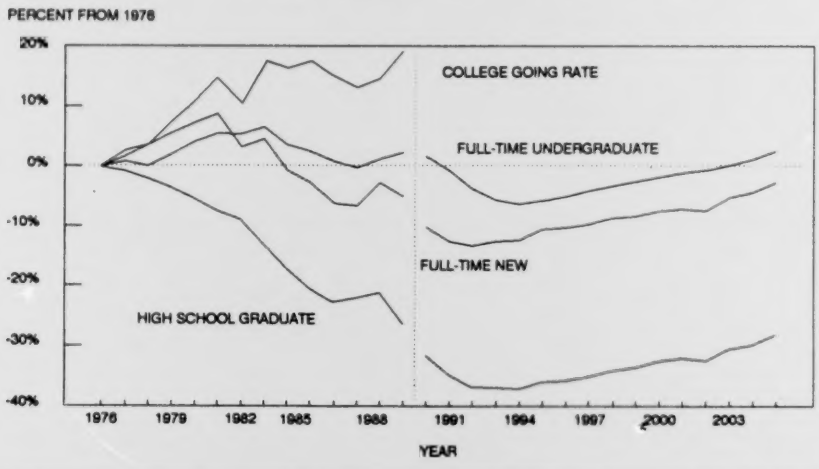
Early estimates of fall 1990 enrollments indicate that the upward trend in total enrollment has continued. These estimates, received by the Department in October 1990, show a 2.3 percent growth in total enrollments, from 1,003,366 in 1989 to 1,026,047 in 1990.

Full-time undergraduate enrollments grew by 3.1 percent, from 550,483 to 567,443, statewide. That growth included a 4.5 percent increase at State University, 5.9 percent at City University, no change at independent institutions and a 7.3 percent growth in the proprietary colleges. Full-time graduate enrollments are up 3.2 percent statewide, from 53,888 to 55,627, including a 2.1 percent increase at SUNY, 2.7 percent at CUNY, and 3.6 percent at independent colleges and universities. Statewide, the total number of students studying for first-professional degrees has increased by 3.5 percent, from 25,958 to 26,865, including 2.2 percent growth at SUNY, virtually no change at CUNY (-0.5 percent), and 3.8 percent growth at independent institutions.

In contrast to the continued growth in full-time undergraduates, the number of full-time first-time freshmen appears to have continued to decline, dropping 2.3 percent, statewide, from 144,154 in the fall of 1989 to 140,796 in the fall of 1990. At State University the number of full-time first-time freshmen was virtually unchanged (-0.5 percent). At City University it dropped by 4.0 percent. Among independent institutions it declined by 3.9 percent. At proprietary colleges it was down 1.5 percent.

These are preliminary estimates only. However, the estimates are based on information from all SUNY and CUNY campuses, 77.8 percent of all independent institutions, and 76.9 percent of all proprietary colleges. Opening fall 1990 enrollments will not be available until later in the year. Once these firmer reports have been received, we will analyze them to seek the causes of the growth. The only possible explanation, however, is improvement in retention and/or in participation. As noted above, we know that colleges and universities have been improving retention. In the 1992

Figure 1
NEW YORK STATE
TRENDS IN HIGH SCHOOL GRADUATES, ENROLLMENT, & COLLEGE GOING RATE
ACTUAL 1976-1989, PROJ. 1990-2005



Statewide Plan we intend to examine whether increased retention is resulting in increased graduation rates.

Enrollment Projections

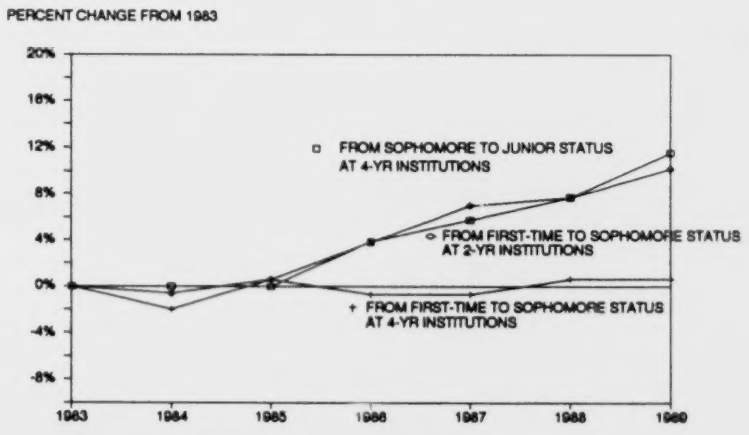
The Projections Model.

The Department produces annual enrollment projections for several levels and types of students (undergraduate, graduate, and first-professional degree; full-time and part-time) by sector, level, and type of higher education institution. The projections are based on a mathematical model of the basic factors which drive enrollments in higher education. Built into the model are assumptions about future trends in the number of high school graduates, future college going rates of recent high school graduates and other age-specific populations, college retention rates, and the way in which changes in enrollments are likely to be distributed across different types of institutions in the State. A complete description of the model and of the specific assumptions used to develop the 1990 projections is available on request. In general, the key assumptions for the 1990 projections are that college-going rates will continue to grow, that the high school population will continue to decline, and that retention rates will continue to show modest increases over the next several years. The assumptions are derived from historic trends. Therefore, a key underlying assumption is that the historical conditions will not change radically. This includes the historic rate of economic growth, which may change as a result of the present Persian Gulf crisis.

The 1988 Plan projected that total enrollments in the fall of 1989 would be 967,860, 0.2 percent lower than in the fall of 1987. Actually, enrollments reached 1,003,366 in 1989, a growth of more than 3 percent. For 1990, the 1988 Plan projected a total of 961,410 students, 0.7 percent fewer than in 1989. Early estimates of actual fall 1990 enrollments indicate that the total is 1,026,047, 2.3 percent more than in 1989. The key reason for this is that conditions have changed from their historical patterns. They have changed because our colleges and universities have made them change so as to avert the projected declines; improving student retention, reaching out to groups in society that had not traditionally enrolled in college -- older persons, members of

Figure 2

NYS: TRENDS IN UNDERGRADUATE CONTINUATION RATES
1983-84 TO 1989-90



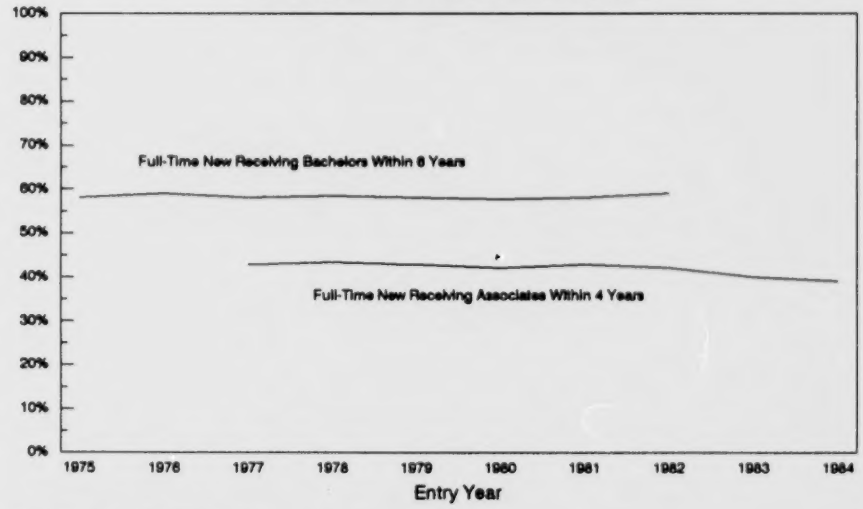
Source: NYSED, Office of Postsecondary Education Policy Analysis

minority groups, women. The result is not only that enrollment levels today are higher than had been projected but also that the composition of the student body in higher education today is significantly different from that of 20 years ago.

Figure 3

NYS: College Graduation Rates /1

for Entering Cohorts 1975-76 to 1984-85 & Degree

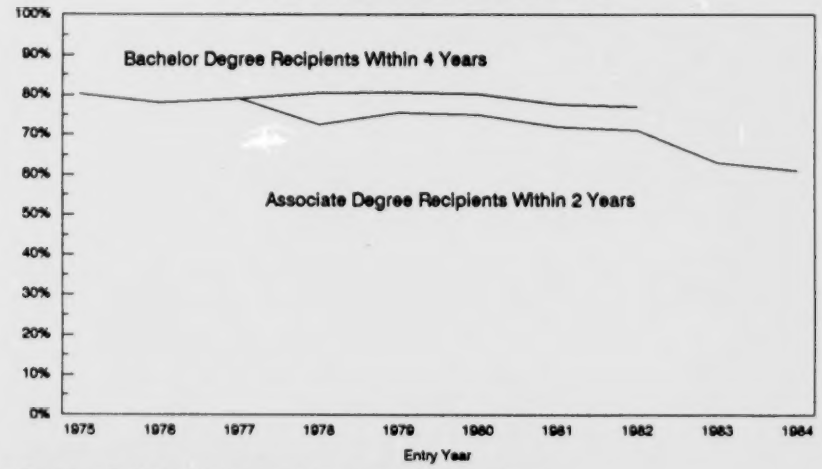


/1 Statewide Rates Excluding City University

Figure 4

NYS: Portion of Graduates Completing on Schedule /1

for Entering Cohorts 1975-76 to 1984-85 & Degree



/1 Based on Bachelor Degree Recipients Thru 6 Yrs From Entry
& Associate Degree Recipients Thru 4 Yrs from Entry
Statewide Rates Excluding City University

Projections.

The Department projects that most categories of enrollment will decline somewhat over the next three to four years and will then begin to increase again through the year 2005. Total enrollments are expected to decline until 1994 and then begin to increase through at least 2005 (see Tables 2-8). The declines between 1990 and 1994 are projected to be sharp, with a loss of about 43,000 full-time undergraduates (7.5 percent) and 7,700 part-time undergraduates (2.9 percent). Total enrollment is projected to decline by more than 47,000 students (4.6 percent). After 1995, enrollments are projected to grow though the year 2005, at which point they should return to about the 1990 levels. Full-time undergraduate enrollment is projected to rebound from the 1994 low of 524,400 students to 574,000 students in 2005 (above the 1990 level). Total enrollment is projected to decline from the 1,000,000 students in 1989 to 979,000 in 1994 and then rise to 1,020,000 in 2005. Full and part-time first professional enrollment is projected to remain unchanged over the next 16 years, while graduate enrollment is projected to increase by about 6 percent by the year 2005.

In 1990, 269,740 part-time undergraduates were enrolled in New York colleges and universities, almost 33 percent of the total undergraduate enrollment; 76 percent were enrolled in public institutions. Only a 3.6 percent decline is projected for part-time enrollment between 1990 and 1995, compared to the 6.9 percent decline for full-time undergraduate enrollment. That represents a decline of just under 10,000 part-time students. While full-time undergraduate enrollments are projected to begin increasing in 1995, part-time undergraduate enrollments are projected to continue to decline until at least 2005 as a result of the changing age composition of New York State's population.

Between 1990 and 1995, all but the City University are expected to lose full-time undergraduate enrollment. SUNY four-year campuses are expected to lose about 10 percent of their full-time undergraduate enrollment; the independent sector four-year institutions, about 10 percent; and the proprietary colleges, almost 11 percent. City University community colleges are expected to gain about three percent while SUNY community colleges are expected to lose about three percent of their full-time enrollment.

Between 1990 and 1995, total enrollment in the State is expected to decline by about 44,000 students. State University is expected to lose about 18,000 students, while the independent sector is expected to lose about 21,000 students. That represents a 4.5 percent decline in State University's total enrollment and a 5.3 percent decline for the independent sector. SUNY four-year institutions are expected to experience larger losses than the SUNY community colleges, six and three percent respectively. City University enrollments are expected to be virtually unchanged in both the senior and the community colleges. The proprietary colleges are expected to experience the largest percentage loss, almost nine percent between 1989 and 1995.

Total enrollment is projected to reach bottom in 1994 and increase through 2005, growing by almost four percent or 38,000 students between 1995 and 2005. State University is expected to regain more students than any other sector, up 21,000 or 5.5 percent during that period. The State University four-year campuses are expected to experience most of that enrollment increase, 13,400 (for an increase of eight percent), while the community colleges are projected to grow by only three percent between 1995 and 2005. City University's total enrollment is expected to remain basically stable during that period while the independent sector's enrollment is expected to increase by about four percent. The proprietary sector is expected to continue to lose students (a three percent decline) between 1995 and 2005.

The probable enrollment declines during the next four years coupled with the State's economic condition could portend major problems for both public and independent institutions. The State needs to continue to invest in higher education so that the institutions will be able to accommodate students when enrollment starts to rise.

TABLE 2
NEW YORK STATE HISTORICAL AND PROJECTED ENROLLMENTS 1970 - 1989, 1990 - 2005

Year	Full-time First-time Students	Full-time Under-Graduate	Part-time Under-Graduate	Total Graduate	Total First Professional	Total Headcount	Full-time Equivalent-Students*
Historical							
1970	139,809	439,726	168,656	139,880	16,128	764,390	591,457
1971	135,385	467,144	174,640	148,111	16,863	806,758	626,025
1972	140,393	473,199	195,417	155,707	17,430	841,753	642,645
1973	145,730	491,621	219,385	162,491	17,685	891,182	672,970
1974	147,220	514,587	234,802	169,282	18,331	937,002	705,178
1975	157,724	549,374	256,086	170,283	18,835	994,578	748,706
1976	151,762	538,147	228,131	151,255	20,150	937,683	721,117
1977	155,667	542,690	225,340	147,213	21,618	936,861	724,564
1978	157,191	538,343	229,423	144,762	22,792	935,320	721,732
1979	160,193	548,648	234,637	145,416	23,122	951,823	734,249
1980	162,816	560,155	244,251	145,275	23,807	973,488	750,230
1981	164,956	567,751	252,769	145,018	24,743	990,281	761,600
1982	156,581	567,169	254,431	140,593	24,795	986,988	758,885
1983	158,591	573,219	256,350	144,706	24,975	999,250	768,195
1984	150,663	557,361	256,536	145,599	24,778	984,274	752,914
1985	147,666	551,744	253,199	147,925	25,126	977,994	748,058
1986	142,290	542,302	255,656	150,918	25,303	974,179	741,585
1987	141,710	536,402	255,769	152,287	25,570	970,028	737,893
1988	147,556	543,852	259,103	155,872	25,382	984,209	748,306
1989	144,184	550,483	268,422	158,503	25,958	1,003,366	760,057
1990	140,796	567,443	269,740	161,999	26,865	1,026,047	780,361
Projected							
1991	136,781	553,481	267,924	162,800	26,865	1,011,070	765,991
1992	135,531	537,735	265,971	163,660	26,865	994,232	749,822
1993	136,665	527,478	263,983	164,618	26,865	982,944	739,132
1994	137,072	524,406	261,987	165,550	26,865	978,808	735,615
1995	140,013	528,457	259,992	166,588	26,865	981,902	739,404
1996	140,340	532,698	258,291	166,639	26,865	984,493	742,872
1997	141,168	537,476	256,561	166,734	26,865	987,636	746,965
1998	142,943	542,377	254,928	166,855	26,865	991,025	751,213
1999	143,337	546,295	253,191	166,970	26,865	993,321	754,445
2000	144,762	550,737	251,496	167,152	26,865	996,250	758,253
2001	145,465	554,734	251,094	167,464	26,865	1,000,157	762,250
2002	145,052	557,199	250,713	167,757	26,865	1,002,533	764,721
2003	148,452	561,961	250,331	168,105	26,865	1,007,263	769,493
2004	149,657	567,066	250,005	168,458	26,865	1,012,394	774,630
2005	152,392	574,894	249,512	168,809	26,865	1,020,080	782,390

** Full-time equivalent is the sum of all full-time students plus 1/3 of part-time undergraduate enrollment plus 4/10 of all other part-time students.*

SOURCE: NYSED, Office Of Postsecondary Education Policy Analysis, Oct. 1990.

TABLE 3
NEW YORK STATE TOTALS
REGENTS ENROLLMENT PROJECTIONS FOR FULL-TIME FIRST-TIME STUDENTS /1/

Institutional Sector and Type /2/	Historical			Projected				Pct Chg 1990	
	1985	1987	1990	1991	1995	2000	2005	To 1995	To 2005
STATEWIDE TOTAL	147,666	140,754	140,796	136,781	140,013	144,762	152,392	-0.6%	8.2%
STATE UNIVERSITY TOTAL	60,218	59,376	60,380	58,628	60,759	63,987	67,652	0.1%	11.5%
4-Year or More	21,571	22,409	19,982	18,833	19,824	21,241	22,617	-0.8%	13.2%
Technology Colleges	9,156	8,745	8,213	7,887	8,111	8,504	8,969	-1.2%	9.2%
Community Colleges	29,491	28,222	32,485	31,908	32,825	34,242	36,066	1.0%	11.0%
CITY UNIVERSITY TOTAL	24,348	21,765	22,327	22,399	22,964	22,969	24,229	2.9%	8.5%
Senior Colleges	13,291	12,451	12,057	12,697	13,151	13,220	14,172	9.1%	17.5%
Community Colleges	11,057	9,314	10,270	9,702	9,813	9,749	10,058	-4.5%	-2.1%
INDEPENDENT TOTAL	54,033	51,851	50,208	48,431	49,139	50,869	53,609	-2.1%	6.8%
4-Year or More	51,767	49,566	48,325	46,727	47,427	49,094	51,836	-1.9%	7.3%
2-Year Colleges	2,266	2,285	1,883	1,704	1,712	1,776	1,773	-9.1%	-5.9%
PROPRIETARY TOTAL	9,067	7,762	7,581	7,323	7,151	6,936	6,901	-5.7%	-9.0%

/1/ The projection methodology is available on request from the Office of Postsecondary Education Policy Analysis.

/2/ All community colleges are classified as community colleges regardless of the degree programs offered.
State University, the Colleges of Technology at Alfred, Canton, Cobleskill, Delhi, Farmingdale, and Morrisville were classified as such; all other institutions were then classified as "4-Year or More."
For The City University, all institutions not classified as community colleges were deemed "Senior Colleges."
Independent institutions offering only first-professional or graduate programs were classified as "4-Year or More."

Source: NYSED, Office of Postsecondary Policy Analysis, OCT. 1990.

TABLE 4
NEW YORK STATE TOTALS
REGENTS ENROLLMENT PROJECTIONS FOR FULL-TIME UNDERGRADUATE STUDENTS /1/

Institutional Sector and Type /2/	Historical			Projected				Pct Chg 1990	
	1985	1987	1990	1991	1995	2000	2005	To 1995	To 2005
STATEWIDE TOTAL	551,744	535,651	567,443	553,481	528,457	550,737	574,894	-6.9%	1.3%
STATE UNIVERSITY TOTAL	209,845	207,558	228,795	221,155	213,176	226,956	239,277	-6.8%	4.6%
4-Year or More	108,066	109,016	113,110	108,308	101,425	109,328	115,834	-10.3%	2.4%
Technology Colleges	18,640	18,119	18,252	17,652	17,225	18,173	19,073	-5.6%	4.5%
Community Colleges	83,139	80,423	97,433	95,196	94,526	99,455	104,370	-3.0%	7.1%
CITY UNIVERSITY TOTAL	98,383	92,363	101,586	101,261	102,333	103,629	106,820	0.7%	5.2%
Senior Colleges	63,147	60,105	64,753	64,064	64,439	65,835	68,450	-0.5%	5.7%
Community Colleges	35,236	32,258	36,833	37,197	37,895	37,794	38,370	2.9%	4.2%
INDEPENDENT TOTAL	221,259	216,289	217,494	212,767	195,458	203,043	211,816	-10.1%	-2.6%
4-Year or More	213,763	209,351	210,992	206,652	189,579	196,943	205,681	-10.1%	-2.5%
2-Year Colleges	7,496	6,938	6,502	6,114	5,879	6,101	6,135	-9.6%	-5.6%
PROPRIETARY TOTAL	22,257	19,441	19,568	18,298	17,489	17,108	16,982	-10.6%	-13.2%

/1/ The projection methodology is available on request from the Office of Postsecondary Education Policy Analysis

/2/ All community colleges are classified as community colleges regardless of the degree programs offered.. State University, the Colleges of Technology at Alfred, Canton, Cobleskill, Delhi, Farmingdale, and Morrisville were classified as such; all other institutions were then classified as "4-Year or More." For The City University, all institutions not classified as community colleges were deemed "Senior Colleges." Independent institutions offering only first-professional or graduate programs were classified as "4-Year or More."

SOURCE: NYSED, Office of Postsecondary Policy Analysis, Oct. 1990.

TABLE 5
NEW YORK STATE TOTALS
REGENTS ENROLLMENT PROJECTIONS FOR PART-TIME UNDERGRADUATE STUDENTS /1/

Institutional Sector and Type	Historical			Projected				Pct Chg 1990	
	1985	1987	1990	1991	1995	2000	2005	To 1995	To 2005
STATEWIDE TOTAL	253,199	255,648	269,740	267,924	259,992	251,496	249,512	-3.6%	-7.5%
STATE UNIVERSITY TOTAL	121,450	125,453	135,493	134,735	131,702	126,298	126,340	-2.8%	-6.8%
4-Year or More	25,403	28,159	29,869	29,685	28,948	27,861	27,671	-3.1%	-7.4%
Technology Colleges	7,522	7,522	7,565	7,526	7,372	6,937	7,053	-2.5%	-6.8%
Community Colleges	88,525	89,772	98,059	97,524	95,381	91,500	91,616	-2.7%	-6.6%
CITY UNIVERSITY TOTAL	61,588	66,106	73,008	72,229	69,118	68,035	66,369	-5.3%	-9.1%
Senior Colleges	38,426	41,560	45,059	44,583	42,672	41,988	40,980	-5.3%	-9.1%
Community Colleges	23,162	24,546	27,949	27,646	26,445	26,047	25,389	-5.4%	-9.2%
INDEPENDENT TOTAL	63,346	58,450	56,397	56,006	54,396	52,510	52,225	-3.5%	-7.4%
4-Year or More	60,365	55,559	53,726	53,350	51,811	49,989	49,752	-3.6%	-7.4%
2-Year Colleges	2,981	2,891	2671	2656	2585	2521	2474	-3.2%	-7.4%
PROPRIETARY TOTAL	6,815	5,639	4842	4955	4777	4654	4577	-1.3%	-5.5%

/1/ The projection methodology is available on request from the Office of Postsecondary Education Policy Analysis.

/2/ All community colleges are classified as community colleges regardless of the degree programs offered.
For State University, the Colleges of Technology at Alfred, Canton, Cobleskill, Delhi, Farmingdale, and Morrisville were classified as such; all other institutions were then classified as "4-Year or More."
For The City University, all institutions not classified as community colleges were deemed "Senior Colleges."
Independent institutions offering only first-professional or graduate programs were classified as "4-Year or More.

SOURCE: NYSED, Office of Postsecondary Policy Analysis, Oct. 1990.

TABLE 6
NEW YORK STATE TOTALS
REGENTS ENROLLMENT PROJECTIONS FOR FIRST-PROFESSIONAL AND GRADUATE STUDENTS /1/

Institutional Sector	Historical			Projected				Pct Chg 1990	
	1985	1987	1990	1991	1995	2000	2005	To 1995	To 2005
FULL-TIME FIRST-PROFESSIONAL	22,699	22,985	23,471	23,471	23,471	23,471	23,471	0.0%	0.0%
State University	4,266	4,276	4,300	4,300	4,300	4,300	4,300	0.0%	0.0%
City University	416	429	435	435	435	435	435	0.0%	0.0%
Independent Institutions	18,017	18,280	18,736	18,736	18,736	18,736	18,736	0.0%	0.0%
Proprietary Institutions	0	0	0	0	0	0	0		
PART-TIME FIRST-PROFESSIONAL	2,427	2,585	3,394	3,394	3,394	3,394	3,394	0.0%	0.0%
State University	7	11	19	19	19	19	19	0.0%	0.0%
City University	0	0	1	1	1	1	1	0.0%	0.0%
Independent Institutions	2,420	2,574	3,374	3,374	3,374	3,374	3,374	0.0%	0.0%
Proprietary Institutions	0	0	0	0	0	0	0		
FULL-TIME GRADUATE	48,457	52,168	55,627	55,422	54,699	53,324	53,289	-0.4%	-1.7%
State University	11,565	12,517	12,926	12,882	12,725	12,154	12,230	-0.3%	-1.6%
City University	5,123	5,755	6,221	6,184	6,048	6,003	5,931	-0.6%	-2.8%
Independent Institutions	31,681	33,768	36,274	36,151	35,724	34,967	34,929	-0.3%	-1.5%
Proprietary Institutions	88	128	206	205	203	200	199	-0.6%	-1.7%
PART-TIME GRADUATE	99,468	100,119	106,372	107,378	111,889	113,828	115,520	0.9%	5.2%
State University	17,353	19,251	22,744	23,023	24,270	24,642	25,085	1.2%	6.7%
City University	16,087	18,279	18,885	18,976	19,384	19,799	19,880	0.5%	2.6%
Independent Institutions	66,028	62,589	64,736	65,372	68,228	69,379	70,547	1.0%	5.4%
Proprietary Institutions	0	0	7	7	7	7	7	0.0%	0.0%

/1/ The projection methodology is available on request from the Office of Postsecondary Education Policy Analysis.

SOURCE: NYSED, Office of Postsecondary Policy Analysis, Oct. 1990.

TABLE 7
NEW YORK STATE TOTALS
REGENTS PROJECTIONS FOR HEADCOUNT ENROLLMENT /1/

Institutional Sector and Type /2/	Historical			Projected				Pct Chg 1990	
	1985	1987	1990	1991	1995	2000	2005	To 1995	To 2005
STATEWIDE TOTAL	977,994	969,156	1,026,047	1,011,070	981,902	996,250	1,020,081	-4.3%	-0.6%
STATE UNIVERSITY TOTAL	364,486	369,066	404,277	396,114	386,191	394,369	407,252	-4.5%	0.7%
4-Year or More	166,660	173,161	182,968	178,216	171,687	178,305	185,140	-6.2%	1.2%
Technology Colleges	26,162	25,641	25,317	25,178	24,597	25,110	26,126	-4.7%	1.2%
Community Colleges	171,664	170,264	195,492	192,720	189,907	190,954	195,986	-2.9%	0.3%
CITY UNIVERSITY TOTAL	181,597	182,932	200,136	199,086	197,319	197,902	199,436	-1.4%	-0.3%
Senior Colleges	123,199	126,128	135,354	134,242	132,979	134,061	135,677	-1.8%	0.2%
Community Colleges	58,398	56,804	64,782	64,844	64,340	63,841	63,759	-0.7%	-1.6%
INDEPENDENT TOTAL	402,751	391,950	397,011	392,406	375,916	382,009	391,628	-5.3%	-1.4%
4-Year or More	392,274	382,121	387,838	383,636	367,452	373,387	383,019	-5.3%	-1.2%
2-Year Colleges	10,477	9,829	9,173	8,770	8,464	8,622	8,609	-7.7%	-6.2%
PROPRIETARY TOTAL	29,160	25,208	24,623	23,465	22,476	21,970	21,765	-8.7%	-11.6%

/1/ The projection methodology is available on request from the Office of Postsecondary Education Policy Analysis.

/2/ All community colleges are classified as community colleges regardless of the degree programs offered.
For State University, the Colleges of Technology at Alfred, Canton, Cobleskill, Delhi, Farmingdale, and Morrisville were classified as such; all other institutions were then classified as "4-Year or More."
For The City University, all institutions not classified as community colleges were deemed "Senior Colleges."
Independent institutions offering only first-professional or graduate programs were classified as "4-Year or More."

SOURCE: NYSED, Office of Postsecondary Policy Analysis, Oct. 1990.

TABLE 8
NEW YORK STATE TOTALS
REGENTS PROJECTIONS FOR FULL-TIME EQUIVALENT STUDENTS /1/

Institutional Sector and Type /2/	Historical			Projected				Pct Chg 1990	
	1985	1987	1990	1991	1995	2000	2005	To 1995	To 2005
STATEWIDE TOTAL	748,058	737,097	780,361	765,991	739,404	758,253	782,391	-5.2%	0.3%
STATE UNIVERSITY TOTAL	273,103	273,872	300,291	292,465	283,817	295,374	307,963	-5.5%	2.6%
4-Year or More	139,309	142,841	149,398	144,601	137,815	144,934	151,630	-7.8%	1.5%
Technology Colleges	21,147	20,626	20,774	20,160	19,682	20,485	21,424	-5.3%	3.1%
Community Colleges	112,647	110,405	130,119	127,704	126,320	129,954	134,909	-2.9%	3.7%
CITY UNIVERSITY TOTAL	130,886	127,893	140,132	139,547	139,609	140,666	143,261	-0.4%	2.2%
Senior Colleges	87,929	87,453	93,983	93,134	92,900	94,189	96,428	-1.2%	2.6%
Community Colleges	42,957	40,440	46,149	46,413	46,710	46,477	46,833	1.2%	1.5%
INDEPENDENT TOTAL	319,452	313,884	318,547	313,821	296,690	303,350	312,458	-6.9%	-1.9%
4-Year or More	310,962	305,983	311,155	306,821	289,950	296,409	305,499	-6.8%	-1.8%
2-Year Colleges	8,490	7,901	7,392	7,000	6,741	6,941	6,959	-8.8%	-5.9%
PROPRIETARY TOTAL	24,617	21,448	21,391	20,157	19,287	18,863	18,709	-9.8%	-12.5%

/1/ The projection methodology is available on request from the Office of Postsecondary Education Policy Analysis.

/2/ All community colleges are classified as community colleges regardless of the degree programs offered.
For State University, the Colleges of Technology at Alfred, Canton, Cobleskill, Delhi, Farmingdale, and Morrisville were classified as such; all other institutions were then classified as "4-Year or More."
For The City University, all institutions not classified as community colleges were deemed "Senior Colleges."
Independent institutions offering only first-professional or graduate programs were classified as "4-Year or More."

SOURCE: NYSED, Office of Postsecondary Policy Analysis, Oct. 1990.

CHAPTER II

ASSURING FULL PARTICIPATION IN SOCIETY FOR ALL NEW YORKERS

To assist in assuring full participation in society for all New Yorkers, the Regents 1988 Statewide Plan called on The University of the State of New York's colleges and universities to make educational programs accessible to persons of all races, creeds, national origins, and ages; persons of both sexes; and persons with disabilities. The Regents stated the following policy in the Plan:

> **The opportunity to obtain a college education must be equally available to all residents of New York State who can meet academic requirements. This opportunity must not be denied because of economic barriers; physical impediments; lack of means to redress inadequate prior academic preparation; or the absence of the support services needed to motivate, encourage, and assist students, particularly those most at risk of dropping out of college. Where such barriers exist, actions must be taken to remove them.**

Further, the Regents declared that colleges and universities have an obligation to assist elementary and secondary schools to ensure that all students in the State have an opportunity to participate in higher education and otherwise to participate fully in society.

This chapter seeks to assess the progress that has been made to fulfill this policy. The chapter is divided into five major sections:

- **(1) addressing the needs of underrepresented groups -- racial and ethnic minorities and other groups,**
- **(2) helping the educationally disadvantaged,**
- **(3) improving pre-college preparation,**
- **(4) reducing financial barriers, and**
- **(5) providing transfer opportunities through articulation within The University of the State of New York.**

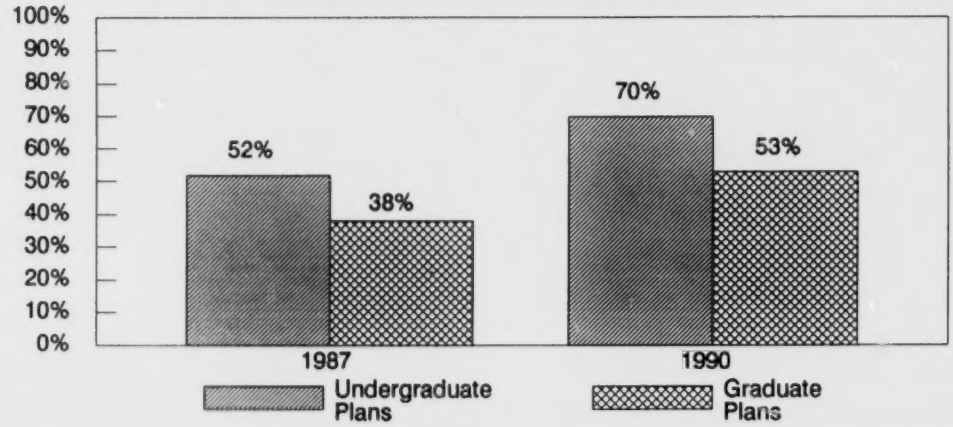
Addressing the Needs of Underrepresented Groups

Underrepresented Racial and Ethnic Minorities.

The 1988 Plan asked colleges and universities to adopt written, formal plans to recruit and retain underrepresented minority students. By developing such plans, New York's colleges and universities can clearly show commitment to increase minority representation on their campuses and can better track progress toward meeting their goals in this area.

It is encouraging to note that higher proportions of New York institutions have developed minority recruitment and retention plans. In 1987, 52 percent of the institutions reported that they had a formal written plan to recruit and retain minority students to undergraduate education and 38 percent of the institutions that offer graduate and professional programs had such recruitment and retention plans. By 1990, those percentages were up to 70 percent and 53 percent, respectively, according to the responses to the questionnaire for this Progress Report (see Figure 5 . Nationwide, according to a survey of campus administrators by the American Council on Education (ACE) for the report, Campus Trends, 1989, close to four in ten colleges and universities

Figure 5
Percent of New York Institutions with Formal Minority Recruitment and Retention Plans, 1987 and 1990



operate under a board-adopted policy with specific goals for increasing minority participation.

About four in ten administrators in the country who responded to the ACE survey said that the overall commitment to minority advancement on their campus was high. A large proportion of institutions in the country (80 percent) are making at least some effort to increase enrollment and retention of minority students at the undergraduate level -- about one-third report a lot of effort in this area. Also, about 80 percent of institutions in the country have increased financial support for minority students to improve their participation, including about one-quarter that have increased financial support a lot in their view. Fifteen percent of institutions planned a major increase in funds allocated for improving minority participation and an additional 21 percent were discussing the idea.

A large number of New York institutions also have devoted their resources to supporting Black, Hispanic, and Native American enrollment. According to the responses to the questionnaire, nearly three-quarters of the colleges and universities (74 percent) have made a financial commitment to support undergraduate minority enrollment, and over half of those that offer graduate and professional programs have made a financial commitment to support higher levels of study. Nearly one-half (46 percent) of the institutions that financially support minority undergraduate students and about one-quarter (26 percent) that financially support minority graduate and professional students base all of that aid on financial need.

High percentages of responding undergraduate institutions in New York reported that, to improve participation of Blacks, Hispanics, or Native Americans in undergraduate education, between fall 1985 and fall 1989 they increased efforts to (1) recruit in high schools with high proportions of underrepresented minority students (72 percent), (2) bring prospective underrepresented minority students to campus (70 percent), and (3) use institutionally funded aid to augment other aid (63 percent).

To improve retention of Blacks, Hispanics, and Native Americans in undergraduate education, high percentages of New York institutions reported that between 1985 and 1989 they increased their efforts to provide academic advisement (66 percent), financial aid (65 percent), and remedial instruction (59 percent). In response to the Questionnaire for the Regents 1988 Statewide

Plan, significant proportions of public institutions reported that providing students with child care services was effective in reducing minority attrition (38 percent of SUNY campuses and 50 percent of CUNY colleges), while less than 10 percent of independent institutions provided this service for that purpose in 1988. Figure 6 shows that between 1985 and 1989, 50 percent of SUNY campuses, 60 percent of CUNY colleges, 9 percent of independent institutions, and 21 percent of proprietary colleges reported increasing child care services to reduce minority attrition.

New York colleges and universities also are working to increase minority participation in graduate and professional study. Three-quarters of New York institutions that offer graduate and first-professional programs take underrepresented minority status into consideration as a positive factor -- to address historic underrepresentation -- among other factors in the graduate and first professional admissions decision.

To further improve participation in graduate and professional study, 47 percent of New York institutions have increased direct recruitment in colleges with high proportions of minority enrollment, 51 percent have increased student financial aid programs for underrepresented groups, and 28 percent have increased the use of minority recruiters.

Have these efforts resulted in enrollment increases for minorities in New York State? Unfortunately, the answer is not in all cases (see Figure 7).

Black headcount undergraduate enrollment in New York declined by two percent between 1984 and 1988. This is contrasted with a four percent increase nationwide. New York's decline was entirely in Black full-time undergraduate enrollment, which went down by seven percent; Black part-time undergraduate enrollment increased by eight percent during this period (see Figure 8). Almost all of the Black full-time undergraduate decline was in Black male enrollment -- Black male full-time undergraduate enrollment declined by 15 percent, while Black female full-time undergraduate enrollment only declined by

Figure 6
Percent of Institutions by Sector
Reporting an Increase in Child Care Services
to Reduce Minority Attrition, Fall 1985 - Fall 89

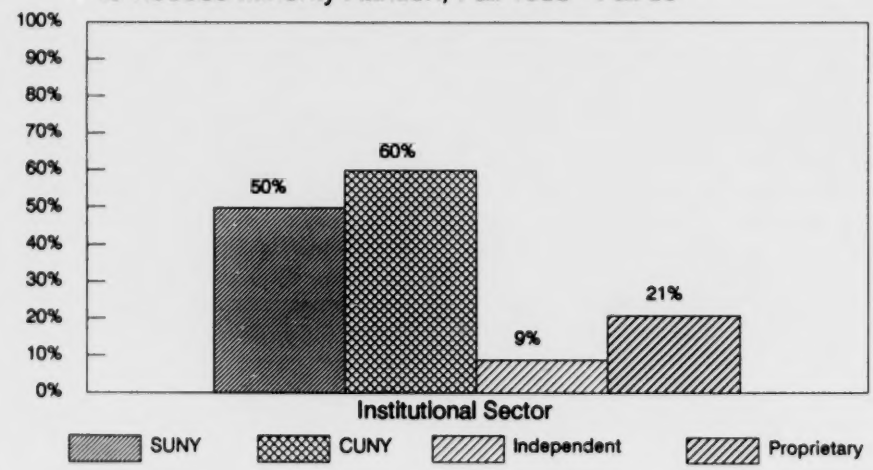


Figure 7
Enrollment Changes by Racial/Ethnic Category and Level of Study
Percent Change - 1984-88

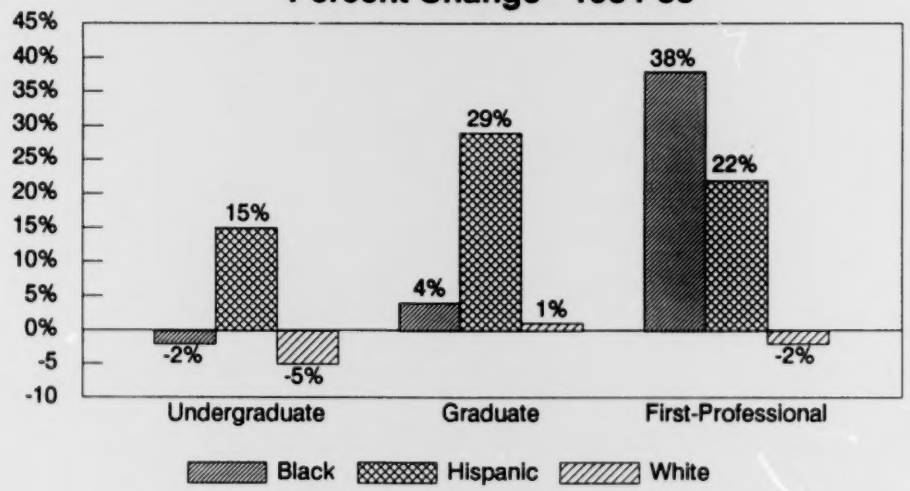


Figure 8
Undergraduate Enrollment Changes by Racial/Ethnic Category, Full-Time, Part-Time
Percent Change - 1984-88

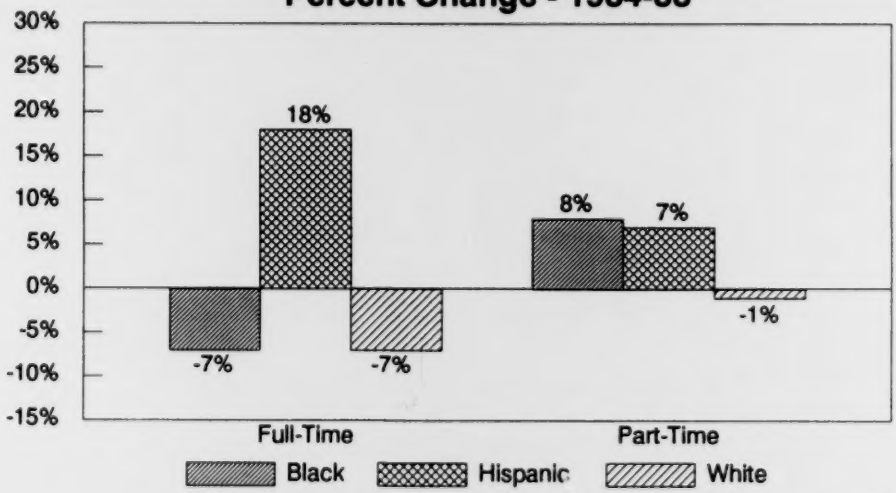
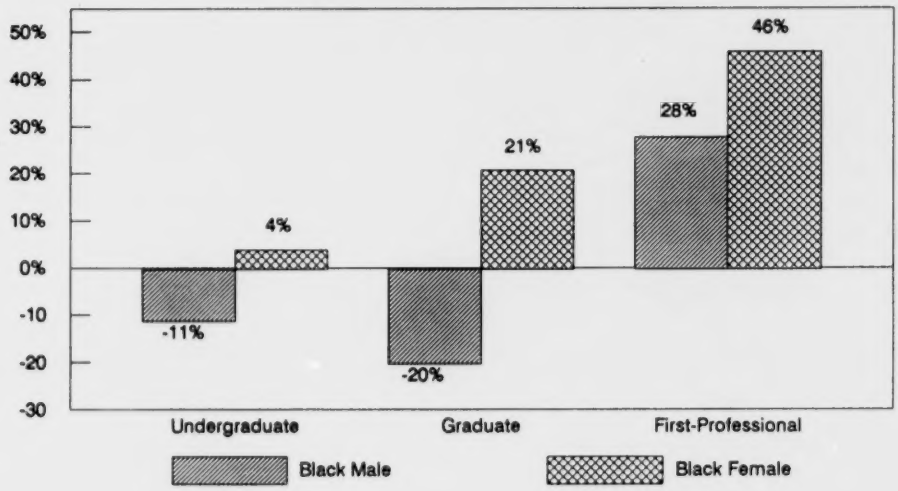


Figure 9
Black Enrollment Changes by Gender and Level of Study
Percent Change - 1984-88



about 1 percent (see Figure 9).

In New York, Hispanic headcount undergraduate enrollment followed a completely different trend -- increasing significantly, by 15 percent, between 1984 and 1988. However, this rate of increase was almost half the nationwide rate of 28 percent. Hispanic full-time undergraduate enrollment in New York increased by 18 percent and Hispanic part-time undergraduate enrollment, by 7 percent.

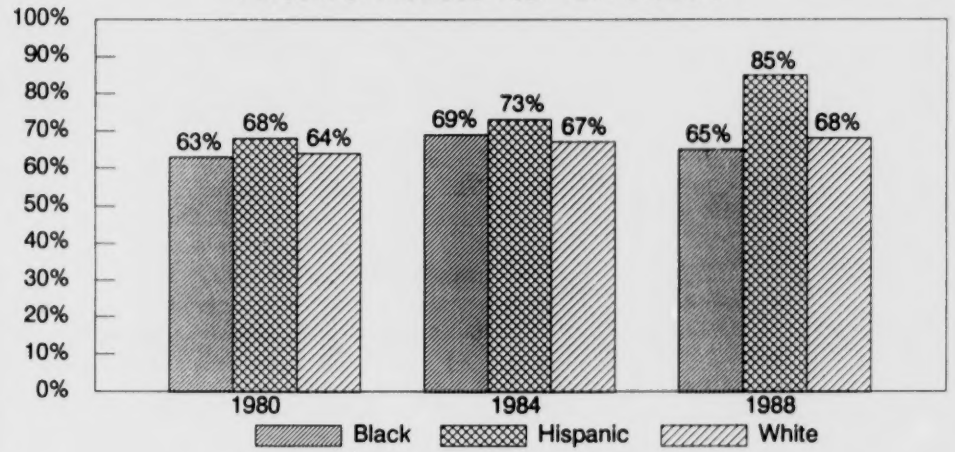
It should be noted that white headcount enrollment in New York declined by five percent between 1984 and 1988, and total undergraduate enrollment in the State declined by one percent during this period. The country as a whole showed a different trend -- white enrollment increased by five percent and overall enrollment by seven percent.

College participation rates can help to illustrate the New York trends. These are the ratios of full-time first-time freshmen from New York to 12th grade enrollment one year earlier. The participation rate for Black students declined by four percent between 1984 and 1988, moving from 69 percent to 65 percent. Hispanic participation rates increased by 12 percentage points, from 73 percent to 85 percent between 1984 and 1988. White participation rates increased by one point, from 67 percent to 68 percent (see Figure 10).

At the graduate level, Black headcount enrollment in New York did grow somewhat between 1984 and 1988 -- by about four percent. This is well below the national rate of increase of 13 percent. All of New York's increase was in Black female enrollment; Black male graduate enrollment declined by 25 percent during this period (see Figure 9). As at the undergraduate level, Hispanic graduate headcount enrollment grew significantly -- this time by 29 percent, which was higher than the national increase of 22 percent. In New York, white graduate headcount enrollment grew by about one percent and overall graduate headcount enrollment by about seven percent during this period. In the country as a whole, white graduate enrollment increased by six

Figure 10

New York State
Full-Time College Participation by Race
Percent of Previous Year 12th Graders



percent and overall graduate enrollment by ten percent.

Black first-professional enrollment in New York increased dramatically, by 38 percent, between 1984 and 1988, and both male and female Black students shared in the increase. New York's increase was nearly five times the nationwide increase of eight percent. Hispanic enrollment also increased significantly during this period in New York, by 22 percent at the first-professional level -- nearly double the nationwide increase. In New York State, white first-professional enrollment declined by two percent while total first-professional enrollment increased by three percent. In the nation as a whole, white first-professional enrollment declined by eight percent and overall first professional enrollment declined by four percent.

The 1988 Plan called on each of New York's then 41 doctorate-granting institutions to increase annually the number of graduate students from underrepresented minority groups by at least one in each discipline in which it offers doctoral study. This alone would increase the number of Black, Hispanic, and Native American graduate students by 775 each year, a number equal to six percent of all the Black, Hispanic, and Native American graduate students in the State in the fall of 1988. For these graduate institutions to meet this goal, they would have to increase significantly the number of minority students they admit each year. Over the four-year period 1984 to 1988, the total increase in the number of their Black, Hispanic, and Native American graduate students was only 51 students. To determine if these graduate institutions are meeting the Regents goal, we will have to look at fall 1989 minority enrollment figures. These data are not yet available. When they are, we will report on this objective.

Women in Underrepresented Fields

Women have been underrepresented historically in computer science, engineering, and the physical sciences at both the undergraduate and graduate levels of study and in mathematics at the graduate level. It is encouraging that nearly two-thirds (65 percent) of the institutions that offer undergraduate programs in these fields have im-

plemented programs to address female underrepresentation. However, only one-third of the institutions that offer graduate programs in these fields have initiated such programs, according to responses to the questionnaire for this Progress Report.

Women are underrepresented in all first-professional programs as well. According to the responses to the questionnaire, only 40 percent of the institutions that offer first-professional programs in medicine, dentistry, and the law have initiated programs to address female underrepresentation.

What are the enrollment trends in these underrepresented areas? Unfortunately, female upper-division undergraduate enrollment declined significantly between 1984 and 1988 in the three fields in which women are underrepresented. Female enrollment declined by 46 percent in computer science, by 27 percent in the physical sciences, and by 11 percent in engineering. Male enrollment also declined in these fields, although generally not so precipitously as female enrollment (see Figure 11).

At the graduate level the news is better -- female enrollment in each underrepresented field increased significantly between 1984 and 1988. In mathematics, female graduate enrollment increased by 45 percent, in engineering by 30 percent, in the physical sciences by 29 percent, and in computer science by 6 percent (see Figure 12).

Female enrollment also increased significantly at the first-professional level in medicine, dentistry, and law. Despite stable total enrollment in medicine between 1984 and 1988, female enrollment increased by 14 percent; and despite overall declines in dentistry, female enrollment increased by 24 percent. In law programs the gains were significant also. Female enrollment increased by 15 percent between 1984 and 1988. Women now make up 45 percent of law school enrollment (see Figure 13).

Students with Disabilities.

The number of students with disabilities enrolling in colleges and universities in New York State is growing. In 1988, 16,068 undergraduate and graduate students in New York's public, independent, and proprietary colleges identified themselves as disabled (1.6 percent of total enrollment) -- up from 9,545 in 1981. This represents a 68 percent enrollment increase during a period when overall enrollment declined by 0.6 percent. The Regents want to assure that disabled New York residents are given full opportunity to pursue higher education in this State. In June 1990, they adopted a comprehensive set of policy directives to support the transition of individuals with disabilities from elementary and secondary school programs to higher education, adult education, and vocational services and employment. Among other activities, these policy directives call on the Department to support the development of in-service training programs for college and university faculty on issues related to students with disabilities and to work with providers of adult and continuing education to train staff, modify curriculum, and identify adults who have not previously received special services.

A high percentage of degree-granting institutions provide special services to students with disabilities. In 1989, the Department conducted a "Survey of Services for College Students with Disabilities." Of the more than three-quarters of degree-granting institutions that responded, 77 percent provide special services for students with disabilities, although the range of services varies from institution to institution. During the 1988-89 academic year, these institutions reported providing special services to a total of 15,635 students, including 5,148 who were learning disabled; 2,213, orthopedically impaired; 2,020, deaf and hard of hearing; 1,003, visually handicapped; 782, emotionally disturbed; 207, speech impaired; 926 multiply handicapped; and 3,336 with other health impairments.

The questionnaire for the 1988 Statewide Plan asked colleges and universities to report major obstacles to the recruitment of students

Figure 11
Undergraduate Upper-Division Enrollment Changes by Gender in Fields in Which Women are Underrepresented Percent Change - 1984-88

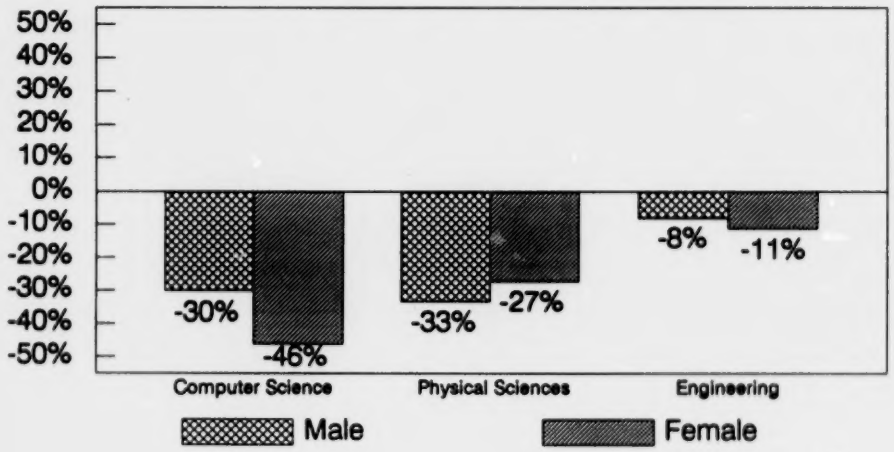


Figure 12
Graduate Enrollment Changes by Gender in Fields in Which Women are Underrepresented Percent Change - 1984-88

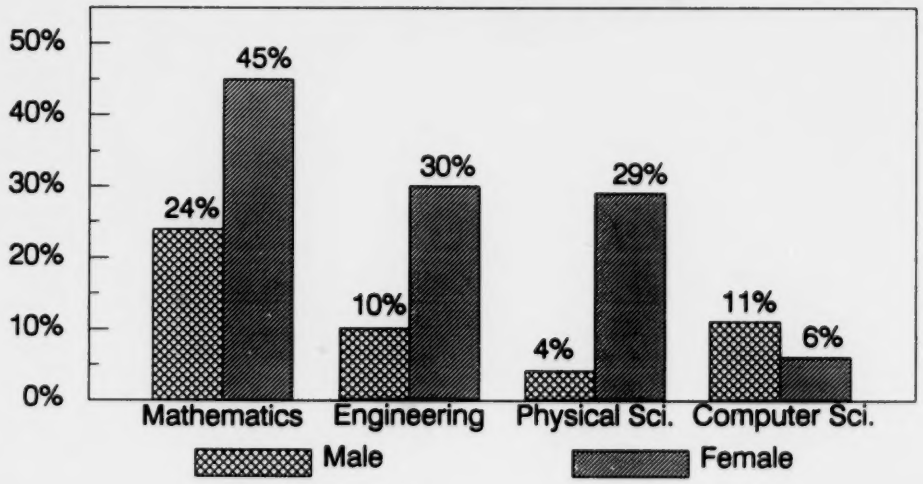
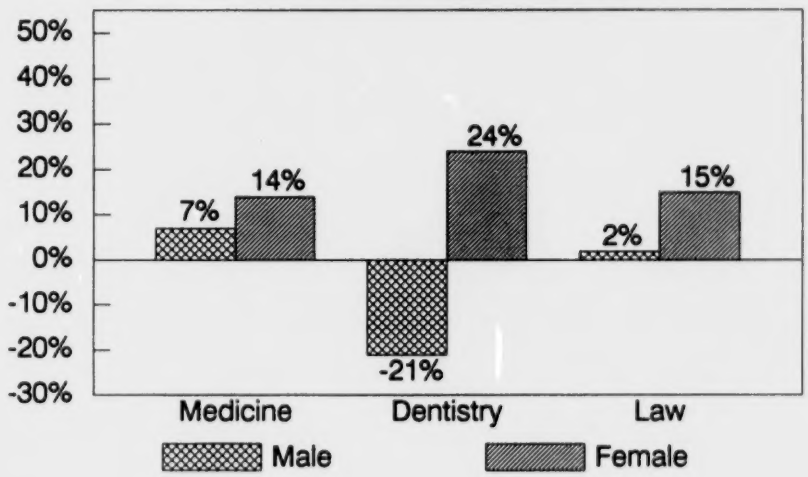


Figure 13
Enrollment Changes in Selected First-Professional Fields by Gender
Percent Change - 1984-88



with disabilities. Two needs were reported by significant proportions of institutions in all sectors: funds to improve accessibility and funds to purchase devices to assist students with disabilities. A majority of the institutions responding to the 1989 survey also identified a need for specialized, inservice training for existing staff.

Helping Educationally Disadvantaged Students

A growing number of students are not receiving adequate preparation at the elementary and secondary levels for college-level work. Many of these educationally disadvantaged students are also economically deprived and a large proportion are minority group members. Seventy percent of the students in the State-funded special opportunity programs (HEOP, EOP, SEEK, CD) for educationally and economically disadvantaged students are minority group members.

The Regents coordinate the opportunity programs of all the sectors but directly operate the Higher Education Opportunity Program in the independent sector. Over the last 20 years, HEOP has made it possible for more than 50,000 educationally and economically disadvantaged students to attend college. The vast majority of them have been members of underrepresented minority groups. In 1988-89, of 7,735 HEOP students at 80 independent colleges and universities, 43.4 percent were Black and 28.0 percent were Hispanic. Over 60 percent of the HEOP freshmen that year came from families with gross incomes of less than $7,880. They were educationally disadvantaged as well, and inadmissable according to regular admission standards. Almost 38 percent of the freshmen had high school averages of less than 80; 22 percent more had GED's; more than 7 percent of the freshmen had no high school or equivalency diplomas at all. Of those who reported SAT scores, almost 4.1 percent were below 380 on the math test and 56 percent scored below 380 on the verbal test.

Despite their poor prior preparation for col-

lege, HEOP students' performance nearly matches the performance of students who met regular admission standards. By 1988-89, over 52 percent of the HEOP freshmen admitted to four-year colleges in the fall of 1982 had earned baccalaureate degrees, compared to 59 percent of all the regularly-admitted 1982 freshmen at these institutions. Over the last two decades, close to 14,000 students served by HEOP have earned degrees.

In 1988-89, total expenditures of the 80 HEOP programs were $103,542,269, or $3,077 per student. Of the total, only 19.3 percent was provided by the State appropriation for HEOP ($19,986,925). The sponsoring colleges and universities provided 27.0 percent from their own funds ($28,004,100). The other 53.7 percent ($55,551,244) came from other sources (including State and Federal student aid).

For 1989-90 the State appropriation for HEOP was increased to $20,113,000. It remained at that sum for 1990-91, to serve approximately 6,544 students at 78 institutions.

Further information on the Higher Education Opportunity Program is provided in the HEOP Annual Report, available on request.

According to the 1990 questionnaire, 78 percent of undergraduate institutions provide remedial education. In 1987-88, about 42,000 of their full-time equivalent students (3.3 percent) were enrolled in noncredit remedial courses. According to the questionnaire, there was a 30 percent growth in course registrations in noncredit remedial courses between 1987 and 1989 (see Figure 36, in Chapter III below). Over three-quarters of the institutions (76 percent) also said that the number of full-time, first-time freshmen enrolled in at least one remedial course increased between 1985 and 1990. More than two-thirds (67 percent) increased the number of remedial sections offered; 85 percent increased the number of remedial tutoring hours.

Improving Pre-College Preparation

Collaborative Activities.

As stated above, an increasing number of students appear to be underprepared to go on to college-level work after high school. Even more disturbing are the high drop-out rates, particularly among minority students attending our secondary schools. In the Plan, the Regents urged colleges and universities "to work with elementary and secondary schools to meet the full range of community needs," and urged the State to seek ways to "assist colleges and universities to encourage greater numbers of pupils to complete high school."

According to responses to the Progress Report questionnaire, high proportions of New York colleges and universities (82 percent) are cooperating with elementary and secondary schools. To address the high school dropout problem, 42 percent of these institutions provide at least 390 high school tutorial programs, 38 percent provide at least 294 student mentor programs that pair college students with at-risk high school students and 27 percent provide at least 238 "College-Now" type programs that provide college-level instruction for underachieving junior and senior high school students.

New York colleges and universities participate in a number of other cooperative activities in high proportions: 52 percent of the institutions participating in cooperative activities provide at least 1,571 in-service teacher education programs; 49 percent provide at least 714 programs for gifted and talented high school students; 38 percent provide at least 732 programs to advise on high school competencies needed for success in postsecondary study, and 35 percent provide at least 871 programs on the uses of technology in the classroom.

Among programs of school/college collaboration, the State-funded Stay in School Partnership Program (SSPP) is of special note. In 1990-91, 20 institutions with graduate programs in education, psychology, social work, and sociology are providing critical support services to some 7,650 at-risk pupils in grades K-12 in 76 public school buildings receiving aid under the State's Attendance Improvement/Dropout Prevention program. The services provided include skills assessments, tutoring, mentoring, counseling, instruction in English as a second language, and parenting education. In addition, SSPP projects are helping a cadre of K-12 teachers and college graduate students to work effectively with at-risk students in multicultural classroom settings. Since its establishment in 1987, SSPP has been very successful in reducing the dropout rate of at-risk pupils; over its first four years of operation, the pupil retention rate exceeded 94 percent. In 1990-91, $2 million was provided in support of the 20 Stay in School Partnership Programs, a $200,000 reduction from the $2.2 million appropriated in 1989-90.

Teacher Education.

An important way colleges and universities can assist elementary and secondary schools is to improve teacher education training and the level of knowledge and pedagogic skills of teacher education graduates. As noted in Chapter V, below, during 1988-89 and 1989-90, the Department conducted a special statewide review of baccalaureate teacher education programs. Additionally, the Regents have been reviewing and revising requirements for teacher certification, including those for teachers of kindergarten through grade 6 and of academic subjects, grades 7-12.

Two encouraging trends reported by institutions in response to the questionnaire are that student career interest in teacher education is on the rise and that the quality of teacher education applicants is increasing. Eighty-two percent of the responding institutions that offer undergraduate teacher education reported that the number of applications for admission to undergraduate programs leading to teacher certification increased between 1985 and 1989. Over half (53 percent) said that the quality of undergraduates admitted increased; 44 percent said that the quality of applicants remained the same. Only three percent of institutions felt that the quality of applicants decreased during this period (see Figure 14).

The proportion of institutions that report minority enrollment in teacher education programs to be increasing is significantly lower than the proportion reporting increasing white enrollment in teacher education. This signals an unfortunate trend because minority teachers can serve as needed role models for at-risk minority students. As Figure 15 below shows, 66 percent of institutions said that white enrollment in teacher education sequences increased between 1985 and 1989, and 28 percent said that it remained the same. Only 41 percent of institutions said that Black enrollment increased; 54 percent said that it remained the same. Similarly, only 43 percent of institutions said that Hispanic enrollment increased; 49 percent said it remained the same.

A major State strategy to increase minority representation is the Teacher Opportunity Corps (TOC). It supports both the recruitment and training as teachers of members of minority groups historically underrepresented in education and the development of high quality, innovative, and effective teacher education programs. In 1989-90, some 700 undergraduate and graduate students participated, receiving specialized instruction focused on the learning and social needs of at-risk children and the skills, attitudes, and behaviors essential to address those needs through effective teaching. TOC students also receive academic and career counseling, tutoring, National Teacher Examination preparation workshops, enrichment activities, and pre-professional clinical experiences. All TOC participants are provided mentors in their first year of teaching after graduation. These comprehensive services are developed and provided through the collaborative efforts of school districts and higher education institutions. In 1989-90, the State

Figure 14
Percent of New York Institutions: Assessment of Change in Quality of Students Admitted to Teacher Education, 1985-89

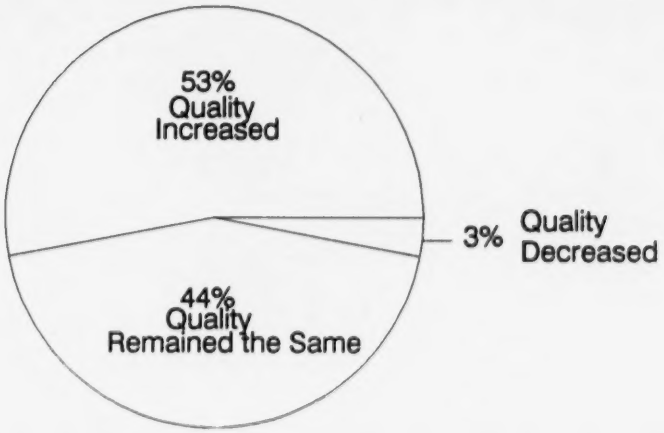
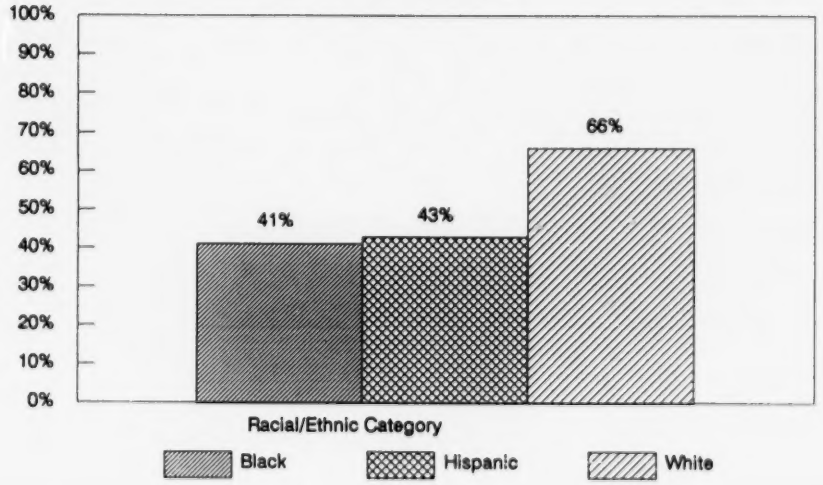


Figure 15
Percent of Institutions Reporting an Increase in Teacher Education Enrollment by Racial/Ethnic Category, Fall 1985 - Fall 89



provided $1.7 million in direct support for them. For 1990-91, the same sum was provided.

Reducing Financial Barriers

As stated above, the Regents declared in their 1988 Statewide Plan that, "The opportunity to obtain a college education must be equally available to all residents of New York State who can meet academic requirements. This opportunity must not be denied because of economic barriers ...." In his 1990 Annual Message to the Legislature, the Governor affirmed his pledge not to allow economic barriers to prevent a child who lives in New York from pursuing higher education. He said that the Liberty Scholarship "gives every child in New York a guarantee that no one will be denied a college education just because he or she is poor."

Faced with declining support from Federal student aid programs during the 1980's, New York State and its colleges and universities have responded by increasing efforts to reduce financial barriers to higher education for low and moderate income students.

New York has maintained low public sector tuition charges, enhanced its Tuition Assistance Program, established the Liberty Scholarship program, and continued to support programs for students from underrepresented groups or educationally disadvantaged backgrounds. In addition, New York's independent institutions dramatically increased their spending on institutionally-funded student aid. Beyond that, the Higher Education Services Corporation has made it easier for students and their families to apply for aid by simplifying the application process for Federal, State, and institutionally funded student aid.

Tuition.

For State University and City University, average annual in-state undergraduate tuition and required fees for full-time students were about $1,000 in 1980-81. By 1989-90, these charges were about $1,500 and $1,300, respectively -- low relative to inflation and to charges at comparable institutions in other states. (See Table 9 and Figure 16.)

For independent and proprietary degree-granting institutions during the 1980's, tuition and required fees increased at national trend rates. Under $5,000 in 1980-81, these charges more than doubled by 1989-90.

The gap between public and private colleges' charges for tuition and fees grew dramatically between 1980-81 and 1989-90, with average independent sector charges becoming six times the average charges at SUNY four-year college campuses. This widening gap was filled, in part, by student aid.

Financial Aid to Undergraduate Students.

New York's undergraduates received well over $1 billion per year in financial aid during the 1980's from four major sources -- the State's Tuition Assistance Program (TAP); the Federal Pell Grant program; institutionally funded grants; and the largest program by far, the Federal Guaranteed Student Loan program (GSL) comprised of Stafford Loans, Supplemental Loans for Students (SLS), and Parent Loans (PLUS). However, the purchasing power of aid provided to undergraduate students eroded as aid per student did not keep pace with inflation or college costs. (See Table 10 and Figure 17.)

Federal aid per student dropped because of deliberate policies to control Federal spending. Between 1980-81 and 1988-89, Pell Grant funds per student rose 18.9 percent, less than the 39.9 percent increase in consumer prices. Federal GSL funds per student decreased by 2.1 percent statewide, by 37.6 percent at State University, and by 41.7 percent at City University.

Statewide average TAP expenditures per student increased by 39.8 percent between 1980-81 and 1988-89. Of the $86 million more expended in TAP in 1988-89 than in 1980-81, none went to CUNY students, 23 percent went to proprietary

TABLE 9
Trends in Average Undergraduate Tuition and Required Fee Charges at Degree-granting Institutions in New York State

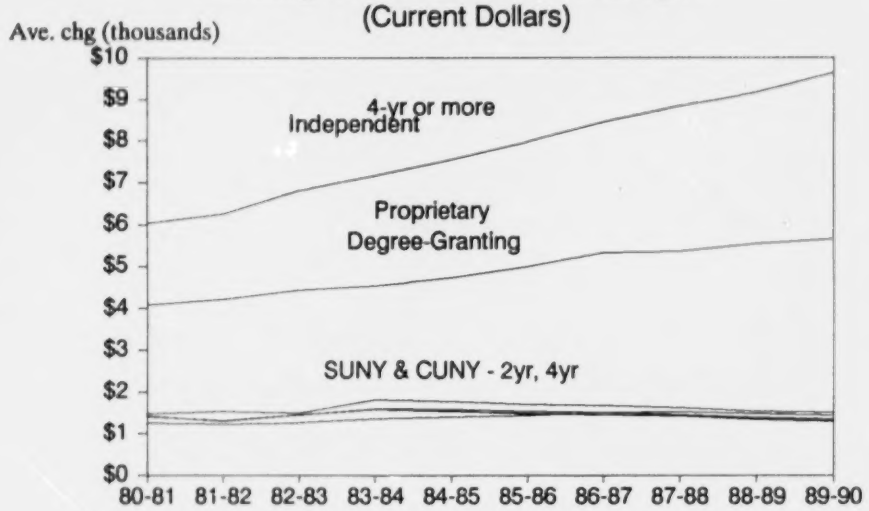
SUNY State-Operated Campuses, excluding statutory colleges	1980-81	$1,017	SUNY Community Colleges	1980-81	$877
	1981-82	$1,156		1981-82	$927
	1982-83	$1,172		1982-83	$993
	1983-84	$1,467		1983-84	$1,106
	1984-85	$1,486		1984-85	$1,191
	1985-86	$1,477		1985-86	$1,245
	1986-87	$1,483		1986-87	$1,339
	1987-88	$1,491		1987-88	$1,406
	1988-89	$1,490		1988-89	$1,424
	1989-90	$1,504		1989-90	$1,443
% Change		47.9%	% Change		64.5%
Avg. % change		4.7%	Avg. % change		5.7%
CUNY Senior Colleges	1980-81	$987	CUNY Community Colleges	1980-81	$984
	1981-82	$988		1981-82	$984
	1982-83	$1,143		1982-83	$1,134
	1983-84	$1,292		1983-84	$1,283
	1984-85	$1,331		1984-85	$1,289
	1985-86	$1,333		1985-86	$1,289
	1986-87	$1,339		1986-87	$1,289
	1987-88	$1,342		1987-88	$1,308
	1988-89	$1,350		1988-89	$1,303
	1989-90	$1,358		1989-90	$1,308
% Change		37.6%	% Change		32.9%
Avg. % change		3.8%	Avg. % change		3.4%
Independent Four-Year or More Institutions	1980-81	$4,155	Degree-Granting Proprietary Institutions	1980-81	$2,821
	1981-82	$4,682		1981-82	$3,163
	1982-83	$5,324		1982-83	$3,470
	1983-84	$5,805		1983-84	$3,688
	1984-85	$6,351		1984-85	$3,980
	1985-86	$6,897		1985-86	$4,319
	1986-87	$7,468		1986-87	$4,721
	1987-88	$8,125		1987-88	$4,924
	1988-89	$8,831		1988-89	$5,337
	1989-90	$9,637		1989-90	$5,647
% Change		131.9%	% Change		100.2%
Avg. % change		9.8%	Avg. % change		8.0%

Averages computed with full-time undergraduate enrollment as weights.

SOURCE: NYSED Office of Postsecondary Policy Analysis. Higher Education Data Systems.

Figure 16

Undergraduate Tuition & Fee Charges
(Current Dollars)



college students, 30 percent to SUNY students, and 47 percent to independent sector students.

Institutionally funded grant aid supplied by independent institutions to their students was the fastest growing source of student aid in the 1980's. In 1988-89, independent institutions spent $321 million on institutionally-funded grants, $197 million more on grant aid than they had in 1980-81, for a statewide per student increase of 136.3 percent and annual increases averaging over 13 percent.

Although independent sector students are expected to benefit from enacted enhancements to the TAP program and the new Liberty Scholarship program, independent institutions plan to continue to increase their expenditures on institutionally funded student aid. Over 75 percent of the State's independent institutions reported in the questionnaire that they expected to continue increasing their spending on institutionally funded grant aid to support low and moderate income undergraduate students during the early 1990's.

Financial Aid to Graduate and First-Professional Students.

It is difficult to get a complete accounting of aid going to students in graduate and first-professional degree programs because this aid is awarded by many units on campuses and some of it does not flow through campus accounts. If we assume that undercounting has been consistent throughout the decade, however, we can construct a reasonably accurate picture of recent trends. (See Table 11 and Figure 17.)

Graduate and first-professional students relied more heavily on federally guaranteed loans than on any other sources of aid. Grants funded by institutions and assistantships funded by a variety of sources were the other two major aid sources. The State's Tuition Assistance Program provided only two percent of all graduate aid. Federal Pell Grants provided no support because only undergraduates are eligible to receive them.

Aid per post-baccalaureate student increased 70.9 percent between 1980-81 and 1988-

Figure 17
Real Changes in Aid per FTE Student
(Constant 1988-89 Dollars)

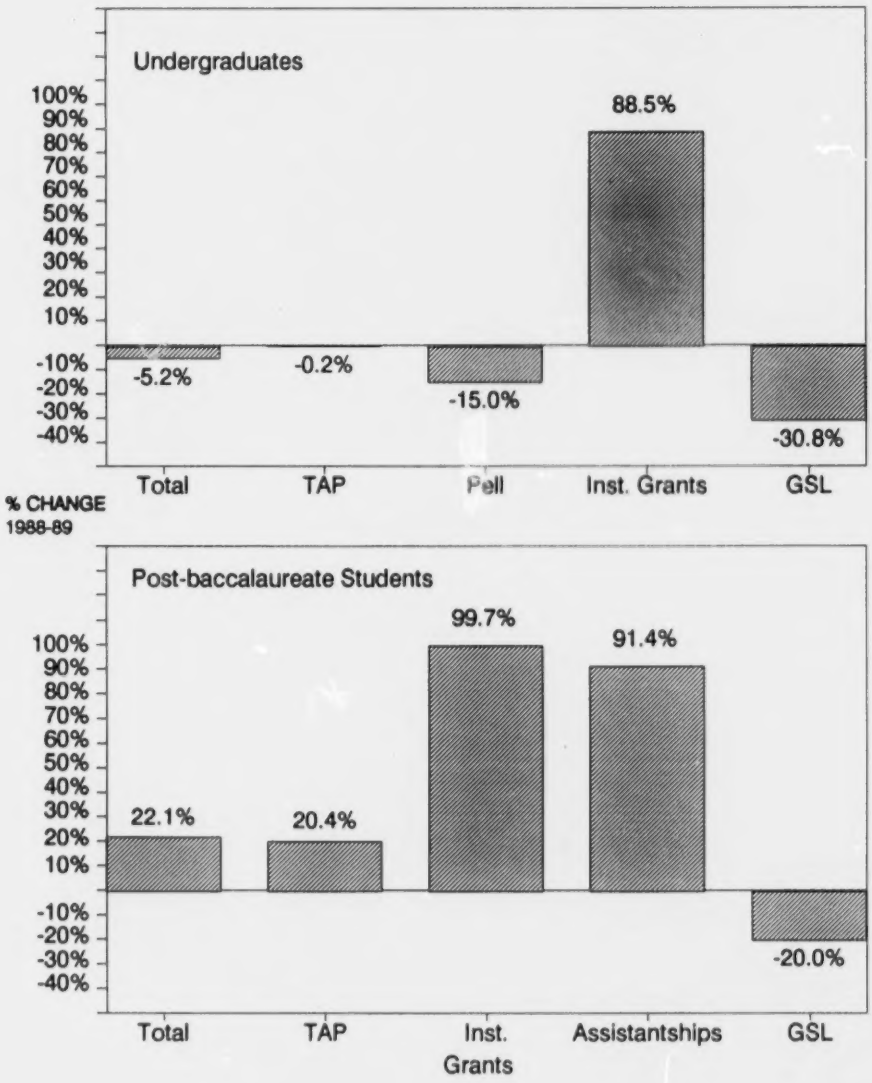


TABLE 10
Trends in Undergraduate Financial Aid and Enrollment at Degree-granting Institutions in New York State

	Dollars per FTE Student					Total Annual Aid Dollars (in millions)					Fall Enrollment	
	Total Aid	TAP Awards	Pell Grants	Inst. Grants	All GSL	Total Aid	TAP Awards	Pell Grants	Inst. Grants	All GSL	Full-time	Part-time
NEW YORK STATE												
80-81	$2,053	$360	$419	$193	$739	$1,317	$231	$269	$124	$474	560,155	244,251
81-82	$2,330	$388	$385	$196	$1,023	$1,519	$253	$251	$128	$667	567,751	252,769
82-83	$2,195	$394	$402	$247	$822	$1,431	$257	$262	$161	$536	567,169	254,431
83-84	$2,394	$446	$431	$282	$862	$1,577	$294	$284	$186	$568	573,219	256,350
84-85	$2,605	$524	$442	$319	$922	$1,675	$337	$284	$205	$593	557,361	256,536
85-86	$2,688	$498	$489	$371	$918	$1,710	$317	$311	$236	$584	551,744	253,199
86-87	$2,615	$555	$432	$418	$768	$1,641	$348	$271	$262	$482	542,302	255,656
87-88	$2,682	$533	$436	$471	$746	$1,667	$331	$271	$293	$464	536,275	255,904
88-89	$2,723	$503	$499	$510	$716	$1,715	$317	$314	$321	$451	543,323	259,304
Change	$670	$143	$79	$316	($23)	$398	$86	$45	$197	($23)	(16,832)	15,053
STATE UNIVERSITY												
80-81	$1,456	$207	$330	$31	$667	$380	$54	$86	$8	$174	222,109	116,518
81-82	$1,682	$237	$308	$15	$882	$448	$63	$82	$4	$235	225,861	121,461
82-83	$1,482	$236	$300	$26	$683	$395	$63	$80	$7	$182	226,265	120,984
83-84	$1,614	$288	$340	$26	$714	$432	$77	$91	$7	$191	227,388	120,886
84-85	$1,740	$315	$361	$27	$765	$448	$81	$93	$7	$197	217,328	120,290
85-86	$1,778	$304	$411	$28	$771	$445	$76	$103	$7	$188	209,845	121,450
86-87	$1,609	$331	$355	$28	$581	$399	$82	$88	$7	$144	207,008	122,985
87-88	$1,519	$325	$357	$28	$469	$379	$81	$89	$7	$117	207,741	125,522
88-89	$1,512	$311	$428	$39	$416	$389	$80	$110	$10	$107	215,257	126,147
Change	$56	$104	$98	$8	($251)	$9	$26	$24	$2	($67)	(6,852)	9,629
%Change	3.8%	50.2%	29.7%	26.8%	-37.6%	2.4%	48.1%	27.9%	25.0%	-38.5%	-3.1%	8.3%
CITY UNIVERSITY												
80-81	$1,672	$414	$654	$50	$298	$202	$50	$79	$6	$36	103,166	53,049
81-82	$1,962	$401	$601	$50	$659	$235	$48	$72	$6	$79	101,444	55,045
82-83	$1,702	$459	$642	$67	$367	$204	$55	$77	$8	$44	100,473	58,239
83-84	$1,891	$510	$682	$74	$403	$230	$62	$83	$9	$49	101,190	61,334
84-85	$1,902	$507	$710	$68	$431	$225	$60	$84	$8	$51	97,525	62,272
85-86	$1,959	$479	$765	$76	$429	$233	$57	$91	$9	$51	98,383	61,588
86-87	$1,704	$482	$680	$52	$275	$198	$56	$79	$6	$32	94,548	64,891
87-88	$1,670	$455	$664	$96	$184	$191	$52	$76	$11	$21	92,361	66,102
88-89	$1,516	$431	$698	$34	$138	$176	$50	$81	$4	$16	92,989	69,396
Change	($156)	$17	$44	($15)	($160)	($26)	$0	$2	($2)	($20)	(10,177)	16,347
INDEPENDENT SECTOR												
80-81	$2,865	$470	$391	$457	$1,019	$689	$113	$94	$110	$245	217,641	68,571
81-82	$3,201	$499	$352	$474	$1,361	$783	$122	$86	$116	$333	221,149	70,421
82-83	$3,183	$498	$370	$600	$1,168	$774	$121	$90	$146	$284	219,929	69,795
83-84	$3,408	$521	$377	$701	$1,202	$831	$127	$92	$171	$293	221,350	67,535
84-85	$3,759	$691	$373	$786	$1,246	$908	$167	$90	$190	$301	219,189	67,177
85-86	$3,858	$648	$400	$899	$1,242	$935	$157	$97	$218	$301	221,259	63,346
86-87	$3,943	$725	$350	$1,034	$1,117	$946	$174	$84	$248	$268	219,619	60,865
87-88	$4,226	$687	$361	$1,154	$1,218	$996	$162	$85	$272	$287	216,209	58,487
88-89	$4,425	$650	$416	$1,295	$1,210	$1,042	$153	$98	$305	$285	216,209	57,868
Change	$1,560	$180	$25	$838	$191	$353	$40	$4	$195	$40	(1,432)	(10,703)
%Change	54.4%	38.3%	6.5%	147.3%	17.1%	51.2%	35.4%	4.3%	147.3%	17.1%	-0.7%	-15.6%
DEGREE-GRANTING PROPRIETARY SECTOR												
80-81	$2,386	$778	$519	$0	$934	$46	$15	$10	$0	$18	17,239	6,113
81-82	$2,542	$988	$518	$0	$941	$54	$21	$11	$0	$20	19,297	5,842
82-83	$2,690	$852	$628	$0	$1,121	$60	$19	$14	$0	$25	20,502	5,413
83-84	$3,335	$1,138	$706	$0	$1,412	$85	$29	$18	$0	$36	23,291	6,595
84-85	$3,674	$1,133	$704	$39	$1,642	$94	$29	$18	$1	$42	23,319	6,797
85-86	$3,955	$1,142	$815	$41	$1,835	$97	$28	$20	$1	$45	22,257	6,815
86-87	$4,225	$1,579	$854	$85	$1,622	$99	$37	$20	$2	$38	21,127	6,915
87-88	$4,613	$1,690	$959	$91	$1,781	$101	$37	$21	$2	$39	19,964	5,793
88-89	$5,169	$1,675	$1,197	$96	$2,058	$108	$35	$25	$2	$43	18,868	6,075
Change	$2,783	$897	$678	$96	$1,124	$62	$20	$15	$2	$25	1,629	(38)
%Change	116.6%	115.3%	130.7%	–	116.7%	134.8%	133.3%	150.0%	–	116.7%	9.4%	-0.6%

Source: NYSED, Office of Postsecondary Education Policy Analysis.

TABLE 11
Trends in Graduate and Professional Students' Financial Aid and Enrollment at Degree-granting Institutions in New York State

	Dollars per FTE Student					Total Annual Aid Dollars (in millions)					Fall Enrollment	
	Total Aid	TAP Awards	Inst. Grants	Grad. Ass't.	All GSL	Total Aid	TAP Awards	Inst. Grants	Grad. Ass't. *	All GSL	Full-time	Part-time
NEW YORK STATE												
80-81	$3,194	$55	$442	$322	$1,896	$347	$6	$48	$35	$206	68,375	100,707
81-82	$3,823	$55	$411	$474	$2,327	$419	$6	$45	$52	$255	69,481	100,280
82-83	$3,779	$47	$580	$552	$1,890	$404	$5	$62	$59	$202	67,917	97,471
83-84	$4,227	$46	$703	$621	$1,990	$463	$5	$77	$68	$218	69,423	100,258
84-85	$4,562	$45	$800	$727	$2,063	$502	$5	$88	$80	$227	69,817	100,560
85-86	$4,655	$36	$885	$715	$1,966	$521	$4	$99	$80	$220	71,156	101,895
86-87	$4,752	$96	$1,008	$763	$1,815	$542	$11	$115	$87	$207	72,626	103,595
87-88	$5,151	$95	$1,087	$828	$2,148	$597	$11	$126	$96	$249	74,969	102,322
88-89	$5,456	$93	$1,235	$863	$2,123	$645	$11	$146	$102	$251	76,099	105,292
Change	$2,263	$38	$793	$541	$227	$298	$5	$98	$67	$45	7,724	4,585
%Change	70.9%	68.5%	179.6%	167.9%	12.0%	85.9%	83.3%	204.2%	191.4%	21.8%	11.3%	4.6%
STATE UNIVERSITY												
80-81	$3,073	$88	$395	$790	$1,492	$70	$2	$9	$18	$34	15,443	18,345
81-82	$4,128	$90	$494	$1,167	$2,019	$92	$2	$11	$26	$45	15,528	16,891
82-83	$3,970	$93	$420	$1,401	$1,588	$85	$2	$9	$30	$34	15,074	15,847
83-84	$4,313	$92	$551	$1,514	$1,652	$94	$2	$12	$33	$36	15,298	16,242
84-85	$4,711	$91	$640	$1,692	$1,784	$103	$2	$14	$37	$39	15,465	15,992
85-86	$4,611	$88	$746	$1,669	$1,581	$105	$2	$17	$38	$36	15,830	17,360
86-87	$4,535	$166	$749	$1,581	$1,373	$109	$4	$18	$38	$33	16,542	18,737
87-88	$4,735	$163	$816	$1,633	$1,551	$116	$4	$20	$40	$38	16,793	19,262
88-89	$5,048	$158	$986	$1,656	$1,538	$128	$4	$25	$42	$39	17,215	20,357
Change	$1,975	$70	$591	$866	$46	$58	$2	$16	$24	$5	1,772	2,012
%Change	64.3%	79.7%	149.6%	109.6%	3.0%	82.9%	100.0%	177.8%	133.3%	14.7%	11.5%	11.0%
CITY UNIVERSITY												
80-81	$1,423	$109	$0	$219	$1,095	$13	$1	$0	$2	$10	4,522	11,536
81-82	$1,677	$105	$0	$210	$1,258	$16	$1	$0	$2	$12	4,743	11,998
82-83	$1,395	$100	$0	$199	$1,096	$14	$1	$0	$2	$11	5,000	12,585
83-84	$1,478	$0	$0	$185	$1,016	$16	$0	$0	$2	$11	5,174	14,137
84-85	$1,647	$0	$87	$173	$1,127	$19	$0	$1	$2	$13	5,383	15,389
85-86	$1,587	$0	$84	$167	$1,002	$19	$0	$1	$2	$12	5,539	16,087
86-87	$1,323	$78	$78	$234	$701	$17	$1	$1	$3	$9	5,939	17,265
87-88	$1,056	$75	$75	$377	$453	$14	$1	$1	$5	$6	5,989	18,170
88-89	$1,058	$71	$71	$423	$353	$15	$1	$1	$6	$5	6,572	19,022
Change	($365)	($39)	$71	$204	($742)	$2	$0	$1	$4	($5)	2,050	7,486
%Change	-25.7%	-35.6%	--	93.3%	-67.8%	15.4%	0.0%	--	200.0%	-50.0%	45.3%	64.9%
INDEPENDENT SECTOR												
80-81	$3,629	$55	$536	$206	$2,227	$264	$4	$39	$15	$162	48,410	60,826
81-82	$3,999	$51	$437	$309	$2,559	$311	$4	$34	$24	$199	49,210	71,391
82-83	$4,029	$40	$702	$358	$2,067	$304	$3	$53	$27	$156	47,843	69,039
83-84	$4,592	$39	$833	$442	$2,237	$353	$3	$64	$34	$172	48,920	69,879
84-85	$4,963	$26	$940	$522	$2,286	$380	$2	$72	$40	$175	48,898	69,178
85-86	$5,138	$26	$1,064	$519	$2,232	$396	$2	$82	$40	$172	49,698	68,448
86-87	$5,385	$78	$1,246	$597	$2,141	$415	$6	$96	$46	$165	50,033	67,589
87-88	$5,960	$77	$1,346	$654	$2,640	$465	$6	$105	$51	$206	52,057	64,897
88-89	$6,381	$76	$1,541	$700	$2,636	$501	$6	$121	$55	$207	52,154	65,908
Change	$2,751	$21	$1,005	$494	$409	$237	$2	$82	$40	$45	3,744	5,082
%Change	75.8%	39.0%	187.4%	239.7%	18.4%	89.8%	50.0%	210.3%	266.7%	27.8%	7.7%	8.4%

Source: NYSED, Office of Postsecondary Education Policy Analysis. Higher Education Data System. CPI rose 39.9% between 80-81 and 88-89.

89, keeping pace with consumer prices and college costs. Federally guaranteed loans were the only major source of aid to post-baccalaureate students that did not keep pace with inflation, rising only 12.0 percent per student. Aid per student from institutionally funded grants went up 179.6 percent and aid per student from assistantships went up 167.9 percent.

Over 65 percent of the State's graduate and first-professional students attended independent sector institutions. As a result, most of the institutional graduate aid was for students attending independent institutions. The vast majority of independent institutions said in their responses to the questionnaire that they expect to continue increasing spending on internally funded graduate student aid during the 1990's. Clearly, State and Federal support for graduate students needs to be increased if adequate numbers of faculty members, other scholars, and highly trained professionals are going to be prepared. This preparation is critical to help revive the State and national economies.

Over the past several years, the Regents legislative program has included bills to enhance the aid provided by the Tuition Assistance Program for graduate study, and bills to establish other programs to aid graduate students. They have not been enacted. The only change in graduate level TAP since the Tuition Assistance Program was established was in 1986-87, when the maximum award was increased to $1,200. No other elements of graduate TAP have ever been enhanced. The Regents intend to include a bill to enhance graduate TAP in their 1991 legislative program.

The Federal programs of aid for undergraduates and graduate students in the Higher Education Act are coming up for reauthorization by Congress. The Regents will present to Congress a comprehensive set of recommendations for reauthorization. Those recommendations will seek to aid disadvantaged youth, reform student assistance for noncollegiate vocational education, reduce student borrowing, and improve both the student aid delivery system and the Federal government's management of its aid programs.

Articulation Within The University of the State of New York

The Regents have a long-standing policy to encourage articulation agreements between high schools and colleges and between two-year and four-year colleges to provide students with ladders of opportunity to pursue higher education. Although the 1988 Statewide Plan did not include a recommendation on articulation, this Progress Report includes the topic because the Regents regard it as highly important and the sector representatives who consulted on the development of the questionnaire for the Progress Report suggested it be included.

Articulation Activity.

According to the responses to the questionnaire, 90 percent of New York's four-year colleges have established articulation agreements with two-year colleges. A total of 1,260 formal and informal agreements have been established. Of these, over one-third (430 agreements) have been established since 1986. Most of the articulation agreements are between four-year campuses of State University and two-year institutions (763). About half as many are between four-year independent institutions and two-year institutions (375). Four-year colleges of the City University have 110 such articulation agreements. Most of the articulation agreements concern specific programs (70 percent), rather than all programs institution-wide (30 percent).

Nearly 40 percent of New York's two-year colleges have entered into 105 articulation agreements with BOCES. Of these, over one-half (61 agreements) have been established since 1986. More than three-quarters (78 agreements) are between SUNY community colleges and BOCES. Independent institutions reported 24 agreements and proprietary colleges, 3 agreements. Ninety-five percent of the articulation agreements are limited to specific programs.

In February 1989, the Regents accepted a

grant from the Ford Foundation through the State Higher Education Executive Officers association to encourage the joint registration of associate degree and baccalaureate degree programs in teacher education. The focus of this project is to help minority students move from two-year to four-year colleges and become teachers. In recent years, much of New York's minority enrollment increases have occurred in two-year institutions. But, graduates of associate degree programs often find that their course work is not easily transferable to degree programs in four-year colleges, especially where licensure or certification is involved. Enrollment in a jointly registered program leading to teacher certification will ensure two-year college graduates of a place in the cooperating four-year institution's teacher education major or sequence. Enrollment in a jointly registered program also will allow students to apply for financial aid from the Empire State Challenger Scholarship and Teacher Opportunity Corps programs two years earlier -- from the time they enroll at the two-year college, instead of on entry to the teacher education sequence at the four-year college. The first program, between Erie Community College and the State University College at Buffalo, was jointly registered this spring.

Public Sector Policies.

Both City University and State University have established articulation policies designed to encourage intra-sector transfer between their two-year and four-year institutions. In its 1988 Master Plan, City University identified articulation, or the promotion of student transfer from community colleges to senior colleges, as an important strategy for maximizing the ability of students to participate in society. State University's Master Plan said that enhancing upper-division access for two-year graduates is a major priority.

City University's policy guarantees a place in one of the system's senior colleges to any CUNY community college graduate, requires that the 64 credits earned in an associate degree program be credited toward the baccalaureate degree, and places maximum limits on the number of credits a senior college can require community college graduates to have earned prior to transferring into related or parallel programs.

State University's policy guarantees A.A. and A.S. graduates of its community colleges and agricultural and technical colleges the opportunity to continue at a baccalaureate campus of the University. Admission requirements at the baccalaureate institutions for such transfer students must be the same as requirements for returning and continuing students. The policy guarantees A.A. and A.S. graduates who are accepted in parallel programs at baccalaureate campuses full junior status at the four-year institution, full credit for general education courses, and the opportunity to complete the requirements for a baccalaureate degree in four semesters of full-time work.

In September 1990, the State University Trustees affirmed this policy and extended it. The extension guarantees A.A. and A.S. graduates of City University the same transfer opportunities as SUNY A.A. and A.S. graduates and calls for SUNY baccalaureate campuses to give priority to A.A. and A.S. graduates of the State University and the City University over other transfers. It calls for academic decisions regarding A.A. and A.S. transfer students to be based solely on previous academic record but directs SUNY baccalaureate campuses to pay particular attention to applications from A.A. and A.S. transfer students from their region who cannot relocate to another part of the State. In addition, the policy advocates the expansion of joint articulation and admission agreements between SUNY two-year and baccalaureate campuses that are in close proximity.

Transfer Trends.

Transfer enrollment is down in the State. However, this probably results from the significant decline in two-year college enrollment rather than from a lack of transfer opportunities. Between 1985 and 1988, the number of students transferring from two-year to four-year institutions decreased by nine percent, from 16,784 to

15,304. Concurrently, enrollment of full-time first-time freshmen at two-year institutions during the period 1983 through 1986 -- the feeder classes -- declined by a full 22 percent.

Results from the questionnaire are consistent with these transfer student enrollment trends. Fairly small proportions of institutions reported that the number of transfer students with associate degrees increased between fall 1985 and fall 1989. Thirty-seven percent reported an increase in A.A. and A.S. transfers; 26 percent, an increase in A.A.S. and A.O.S. transfers. Somewhat less than half of the institutions (46 percent) reported an increase in the number of students who transferred without an associate degree.

Even though the total number of transfer students declined between 1985 and 1988, the public sectors did not share in that decline. The number of transfers to four-year SUNY campuses increased by four percent during this period, from 7,363 to 7,670, and the number of transfers to four-year CUNY colleges was stable, declining by only 14 students, from 1,749 to 1,735. However, the number of transfers to four-year independent institutions declined precipitously between 1985 and 1988, by 23 percent -- from 7,608 to 5,872. The causes of this significant decline may include the growing tuition differential between the sectors and the public sector articulation policies that are designed to ease transfer within each of the public sectors.

CHAPTER III

ENHANCING THE QUALITY OF LIFE FOR ALL NEW YORKERS

In the 1988 Plan, the Regents adopted the policy statement, "As social institutions founded for the purpose of preserving, expanding, and transmitting knowledge, colleges and universities have responsibility to lead in applying the values and principles of our culture to the social, aesthetic, economic, educational, and environmental problems that confront us." This chapter concerns the subject of quality of life. It is divided into three main sections:

- **(1) Assuring a Healthy Campus Climate -- maintaining a learning environment on campus,**
- **(2) Special Services -- activities to meet the needs of nontraditional students, and**
- **(3) Outreach Efforts -- activities conducted by colleges, other than the provision of degree-credit study, that serve needs of the larger society.**

Assuring a Healthy Campus Climate

The Commissioner's Advisory Council on Postsecondary Education met with Department staff in the fall of 1989 to discuss what should be included in this Progress Report. Members of that Council asked that it examine the subject of campus climate. They said that maintaining a civil campus environment in which learning can take place is one of the most important challenges colleges face in this decade. Therefore, although this topic was not specifically addressed in the Statewide Plan, we will address it in the Progress Report.

The topic of campus climate embraces a number of issues that colleges and universities are now facing: making the campus environment comfortable for minority group members and addressing serious problems -- racial, gender, and sexual orientation discrimination and bias-related incidents, campus crime, alcohol and drug abuse on campus, and the AIDS crisis, among others.

The Carnegie Foundation report, Campus Life, In Search of Community, found a deep concern at most institutions across the nation about the quality of life on their campuses. The American Council on Education surveyed college presidents for that report. The survey found that more than half of the presidents were more concerned now about the quality of campus life than they were a few years ago. All the presidents said that administrators should make a greater effort to strengthen the sense of community on their campuses.

The report did acknowledge that colleges and universities have been responsive to the emerging problems of campus life by expanding student support staff and slowly developing new codes of student conduct, but said that a more integrated, strategic approach must be undertaken at most colleges. In their responses to the Progress Report questionnaire, we found that most New York colleges and universities are addressing issues of campus climate as well.

Assessment of Campus Climate.

Many New York institutions appear to be concerned about quality of life issues on their campuses. A large number are examining policies in this area. According to the questionnaire for this Progress Report, 81 percent of degree-granting institutions make formal efforts to assess the quality of life on their campuses. Of those that do, 37 percent employed one of the nationally-developed survey or assessment instruments for this purpose (see Figure 18).

According to the responding institutions, for-

Figure 18

Percent of New York Institutions that Make Formal Efforts to Assess Quality of Life on Campus

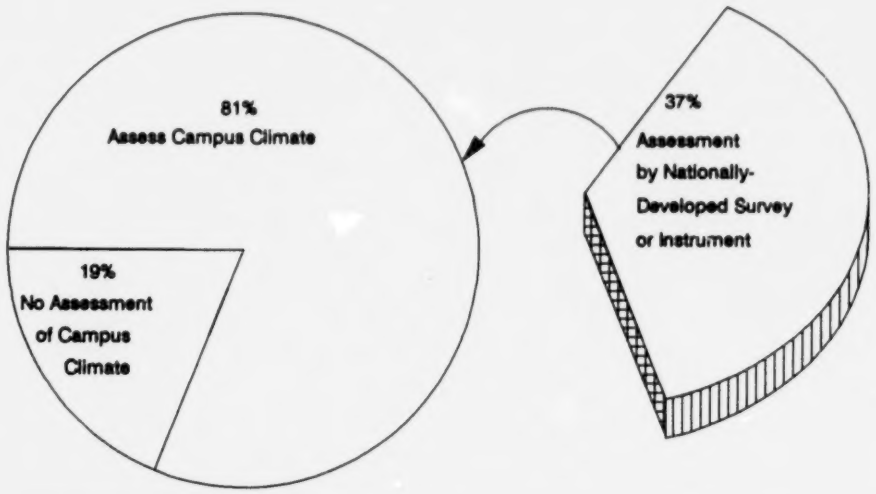
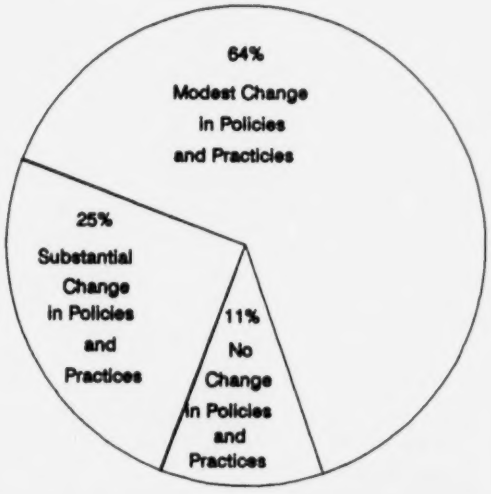


Figure 19

Percent of New York Institutions: Effect of Campus Climate Assessment on Policies and Practices



mal assessments of this kind generally have resulted in at least some change on campus. While one-quarter of the institutions that formally assessed campus climate said that the assessment caused substantial change in institutional policies or practices, nearly two-thirds (64 percent) reported that the assessment caused modest change. Eleven percent said that it caused no change in institutional policies or practices at all (see Figure 19).

Racial Problems on Campus.

Reports in the nation's media have detailed a growing number of bias-related incidents. Although it is difficult to quantify with accuracy the number of bias-related incidents occurring on the nation's campus -- many go unreported -- the National Institute Against Prejudice and Violence, Baltimore, Maryland, a leading watchdog organization, has documented bias-related incidents on 130 college campuses (out of about 3,500, nationwide) since the 1986-87 school year. These include incidents of racial, religious, ethnic, and homophobic violence and harassment, and range from mob violence to incidents of spoken slurs and insensitivity.

As part of its long-range strategic plan to recruit and retain underrepresented minorities, State University is examining bias-related incidents on its campuses. State University surveyed its campuses to determine the extent of the problem -- 43 bias-related incidents were reported to campus offices of public safety in the fall of 1988, 49 in the spring of 1989, and 48 in the fall of 1989. SUNY Chancellor D. Bruce Johnstone has called on the system's presidents to develop programs and activities to prevent bias-related incidents and to respond quickly and decisively when they occur.

One-quarter of the presidents of all institutions surveyed by the American Council on Education for the Carnegie Foundation study said that racial tensions and hostilities are a moderate to major problem on their campus; three-quarters did not say this. For research and doctoral degree-granting institutions, the percentage that saw them as a moderate to major problem was much higher -- 68 percent. Overall, only 16 percent said specifically that racial intimidation or harassment was a moderate to major problem, but 48 percent of presidents of doctoral degree-granting institutions said it was.

In another survey by the American Council on Education, this one directed to academic vice-presidents in support of the report, Campus Trends, 1989, a significant minority of administrators across the nation (40 percent) said that the climate for Blacks and Hispanics was only fair or poor on their campus. Sixty percent rated campus climate for minorities to be good or excellent. Although most administrators said that their institutions were engaged in some level of activity to improve campus climate for minorities (83 percent), only about one-third would rate that level of activity to be high.

Institutions have pursued a number of strategies to address racial intolerance. One is to offer courses that promote multicultural and racial understanding. Campus Life, In Search of Community advocates this approach; it recommends that students take time from their formal programs of instruction to learn about the heritage and traditions of other racial and ethnic groups so that social relationships on campus can be put in context.

A large number of New York institutions are offering instruction designed to promote racial understanding. In answer to the questionnaire for this Progress Report, nearly three out of four (73 percent) offer curricula or special classes designed to prepare students to live and work in a culturally diverse society; less than half offer such programs to faculty (46 percent) and other staff members (42 percent) (see Figure 20). Fifty-four percent of these institutions offer this instruction through free-standing programs. Even higher proportions of institutions offer the instruction in specific courses within existing curricula (67 percent) and by infusion throughout the curricula (74 percent) (see Figure 21).

Across the country, institutions have also instituted anti-harassment policies to deal with bias-related behavior. These are of two types.

Figure 20

Percent of New York Institutions that Offer Curriculum or Special Classes on Cultural Diversity

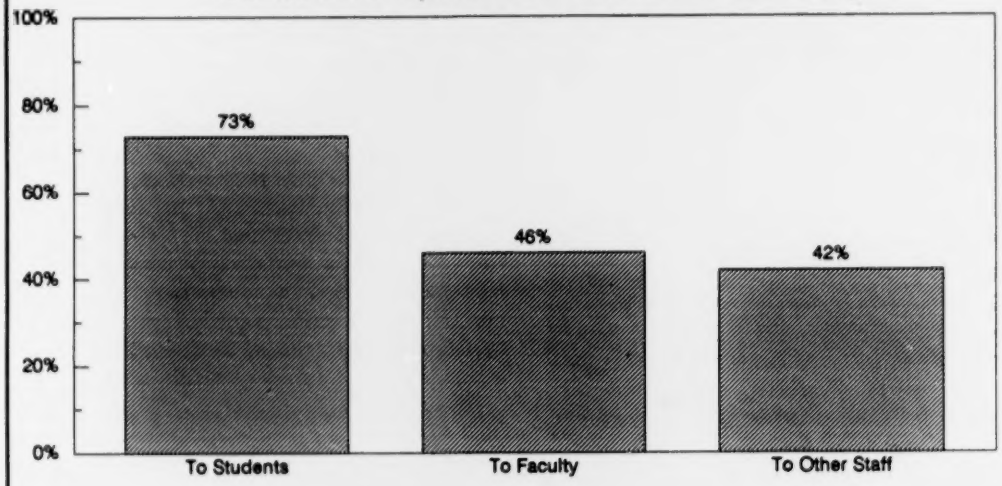
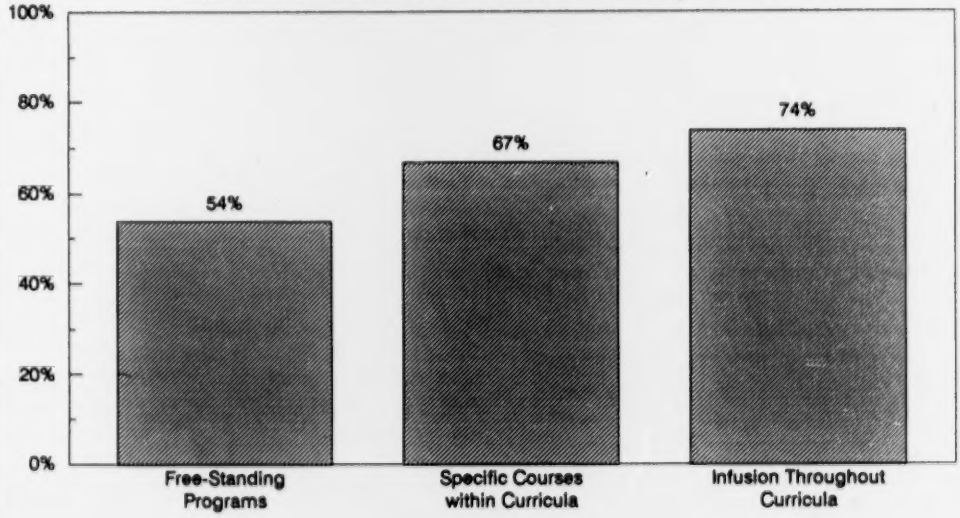


Figure 21

Mode of Instruction for Cultural Diversity Curriculum



One penalizes students who directly attack other students verbally or physically. The other penalizes students who engage in offensive behavior, whether directed at an individual or not. Advocates of such policies believe they are necessary to assure a level of civility on their campus. Critics believe that the policies are unavoidably over-inclusive and vague -- chilling the exchange of ideas necessary for higher learning. Courts have struck down such policies promulgated by public institutions as abridging the guarantee of freedom of speech found in the first amendment of the Constitution.

The Carnegie Foundation report criticized anti-harassment policies that restrict the content of speech as contrary to its goal that institutions of higher education be open communities -- "violating the spirit of inquiry upon which both scholarship and a free society depend." The report advocates the setting of sure standards of campus civility and forcefully condemning any violation of those standards. According to the report, racially-biased speech should be handled not through limits on the content of speech, but rather through open dialogue, educational programs, and forums that expose such speech for what it is and strongly condemn it.

In New York, the New School for Social Research pointed out that it has drafted an anti-harassment policy, based on one developed by Stanford University, that it believes meets the test of balancing the rights of all parties. The New School has said that it would be happy to share its policy with other institutions on request.

Minority students who attend predominantly white institutions also may experience more subtle forms of discrimination: what they perceive as unwelcome attitudes of students, faculty and administrative staff, and as a sense of isolation. Panelists at a session of the American Studies Association in 1988 said that the personal costs of attending graduate school were so high that many minority students do not participate, thereby not becoming the next generation of scholars. The panelists said that minority students are forced to give up their minority identities to succeed in graduate school, to leave behind their idiom and speech patterns. They also said that many graduate programs do not include the contributions made by minority group members, for example in Black literature. They stressed the importance of building a network of minority colleagues who feel similarly isolated in order to deal with the stress of graduate study.

Minority student isolation at predominately white institutions of higher education may be caused at least partially by a poor fit between the social and economic status of minority students and white students, according to Walter C. Farrell, Jr. and Cloyzelle Jones in the fall 1988 issue of The Urban Review. In a recent national sample, 68 percent of black college students were found to have come from families with incomes of less than $10,000, compared with only 17 percent of white college students. Minority students are more likely to be academically underprepared, to be of lower economic status, and to be first generation college attenders. This poor socio-economic fit, combined with incidents of bias-related behavior, causes minority students to feel isolated, according to the researchers.

To deal with feelings of isolation, minority students on predominately white campuses have formed groups, such as student unions, in which they can provide mutual support. Campus Life, In Search of Community expressed a concern that the proliferation of groups based on narrow homogeneous status had a tendency to undermine a sense of community at the whole institution. It recommended that institutions encourage such groups to reach out to other groups on the campus to foster a sense of racial understanding and community.

New York's opportunity programs, and the Collegiate Science and Technology Entry Program, have created on many campuses a range of structures and services that are helpful in reducing minority students' feelings of isolation. These structures can provide advice, counseling, and other forms of support, quite apart from any needs for remedial study.

The questionnaire for this Progress Report asked New York institutions their perception of whether minority isolation had increased, remained the same, or decreased between 1985 and 1990. Only a small proportion of institutions (five percent) expressed the belief that isolation of minority group students had increased between 1985 and 1990. About one-half of institutions said that isolation of minority group students remained about the same, and 45 percent of institutions believed it had decreased between 1985 and 1990 (see Figure 22). This is not dissimilar to nationwide findings reported in Campus Trends.

Crime on Campus.

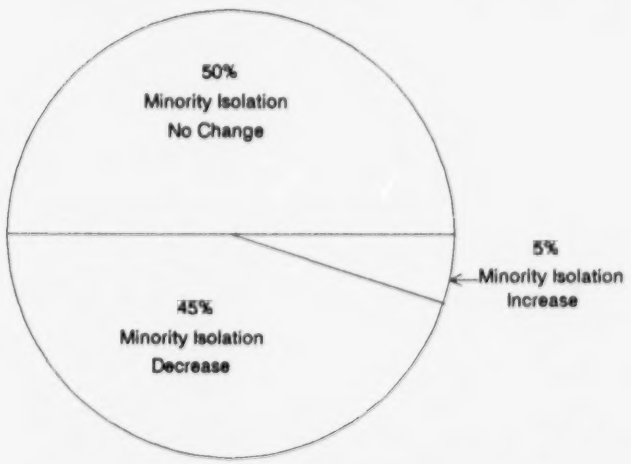
Crime is a problem on the college campus as it is elsewhere in society. According to the Federal Bureau of Investigation's Uniform Crime Report, in the mid-1980's the nation's colleges and universities were reporting 2,000 to 2,500 crimes of personal violence (murder, manslaughter, forcible rape, forcible robbery, and aggravated assault) and over 100,000 serious property crimes (burglary, larceny, motor vehicle theft, and arson) each year. These numbers probably underestimate the problem severely because only about 400 institutions, 11 percent of the nation's colleges and universities, reported this information and because only offenses known to the police were tabulated.

Rape appears to be a particularly prevalent problem on college campuses. Although rape by strangers is most frequently feared by women, research suggests that date or acquaintance rape is the greater danger. Rape by persons that victims already know accounts for 60 percent of rapes in the general society and may be higher on college campuses. Twenty-seven and one-half percent of college women have experienced a rape or attempted rape since age 14, according to a national sample of college students conducted by Mary P. Kass, Christine A. Gidycz, and Nadine Wisniewski of Kent State University, as reported in the April 1987 issue of the Journal of Consulting and Clinical Psychology.

The Carnegie Foundation report found the

Figure 22

Percent of New York Institutions That Reported Increase, Decrease, or No Change in Minority Isolation Between 1985 and 1990



problem of violent crime on campus to be growing, especially at urban institutions. In the survey by the American Council on Education, 26 percent of student affairs officers said that the number of reported crimes on their campus had increased over the last five years. Forty-three percent of officers at research and doctorate-granting institutions believed that it had increased over the last five years. College presidents said that when they considered the quality of life on their campuses, campus security and crime were among the five top issues of greatest concern.

Contrary to the popular belief that campus crime is perpetrated primarily by intruders, research indicates that students themselves commit most crime on college campuses. According to a survey conducted by the American Council of Education and the National Association of Student Personnel Administrators in 1989, students caused 78 percent of sexual assaults, 52 percent of physical assaults, two-thirds of strong arm robberies, more than 90 percent of arsons, and 85 percent of incidents of vandalism. A 1987 survey of student affairs officers, campus security directors, and residence directors across the country by Towson State University, Maryland, revealed a similar finding -- 70 percent of campus physical assaults were perpetrated by students.

Students appear to be feeling the threat of campus crime. A poll conducted by Newsweek magazine in 1986 revealed that 38 percent of students said that they worried about crime on or near their campuses "a great deal" or a "fair amount." One-sixth reported that they were victims of crime while a college student, most of theft.

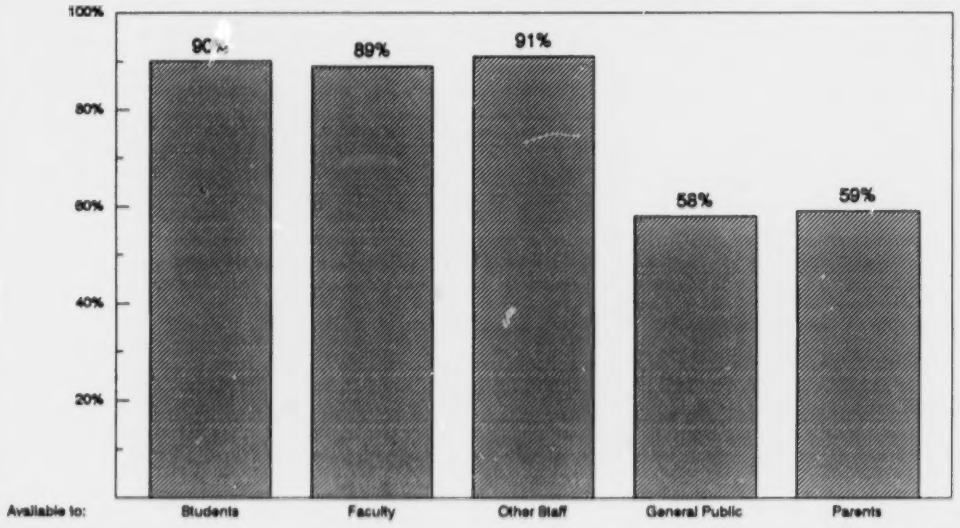
During its 1990 Session, the Legislature enacted Chapters 457 and 739 of the Laws of 1990 to address the problem of sexual assault on college campuses. They amend Section 6450 of Education Law to require the governing board of each New York college and university to provide to incoming students through specified programs required information about sexual assaults on campus and the procedures and security provisions available on campus that prevent sexual offenses and the penalties for such offenses. Each college is required to file a report annually with the Commissioner of Education on compliance with this provision. Further, colleges (except those independent colleges not eligible to receive Bundy aid) are required to establish an advisory committee on campus security to review policies and procedures relating to sexual assault and other security matters.

New York State legislators have also shown their concern over the campus crime problem by sponsoring a number of proposals that would require colleges to collect, report, and publish crime statistics. It should be noted that nearly all New York college campuses have internal mechanisms available to students and staff to report crime. According to responses to the questionnaire for this Progress Report, 90 percent of institutions had reporting mechanisms for students, 89 percent for faculty, and 91 percent for other staff. Much lower percentages of institutions -- somewhat over half -- said that they instituted such reporting mechanisms for the general public (58 percent) and parents (59 percent) (see Figure 23).

Courts have found that colleges have the duty to provide a reasonably safe environment that all property-owners have. They have held campuses civilly liable for security breaches resulting in physical attacks on their students when these attacks were reasonably foreseeable by the institution. The New York Court of Appeals reached this conclusion in a 1984 case involving the rape of a college student in her dormitory room. The Court compared the college to a landlord, and said that it had a duty to maintain minimal security. That duty was created because there had been several other break-ins and thefts, and the attack had been foreseeable.

Colleges have responded to the concern over campus crime and their potential liability by improving security measures -- better lighting, escort services, emergency phone systems, student security patrols, and an increase in the number and quality of campus security personnel; by implementing victim assistance programs; and by offering education programs on crime prevention. Campus Life, In Search of Community urges each college and university to establish a comprehen-

Figure 23
Percent of New York Institutions
that Have Crime Reporting Mechanisms



sive security plan and provide an extensive educational program on the prevention of crime on campus.

New York institutions were asked in the questionnaire for this Progress Report whether they had crime prevention programs for their students. A large percentage said yes. According to the questionnaire, over one-half of New York institutions (58 percent) provide special training or education to students on the prevention of crimes affecting all students. A larger percentage (61 percent) provide training on the prevention of crime against female students. About two-thirds provide special training on the prevention of rape (67 percent) and date/acquaintance rape (66 percent). Less than half (45 percent) provide special training or education related to racial/ethnic bias (see Figure 24).

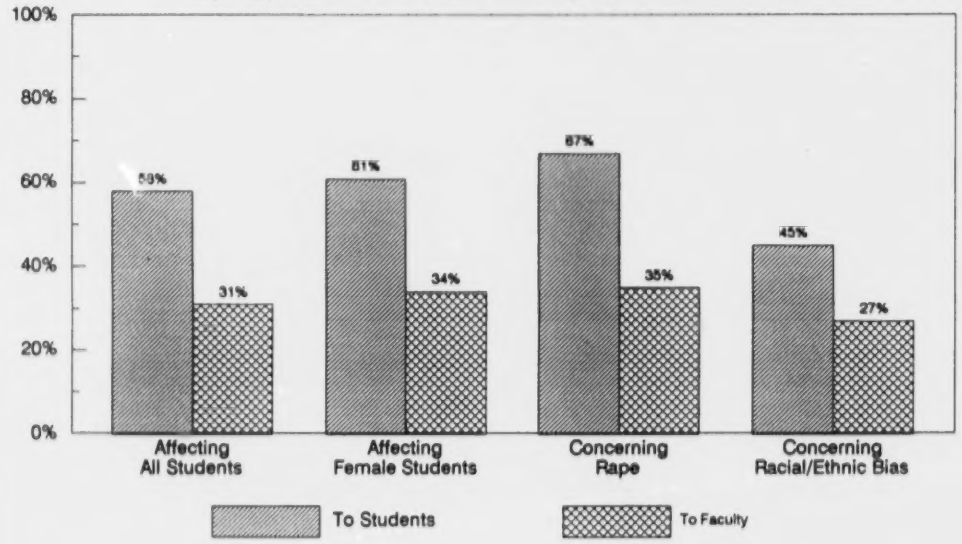
According to the Progress Report's survey, few institutions provide crime prevention training to their faculty and staff. Less than one-third provide special training and education to faculty (31 percent) and staff (28 percent) on the prevention of crimes affecting all students. About one quarter provide training to faculty (27 percent) and staff (25 percent) concerning crimes related to racial/ethnic bias.

Substance Abuse.

Alcohol and drug abuse is a problem on the nation's campuses. According to the survey conducted by the American Council on Education for Campus Life, In Search of Community, two-thirds of college presidents believe alcohol abuse to be a moderate to major problem on their campus. Substance abuse -- primarily alcohol abuse -- was also the problem most frequently mentioned by presidents when they were asked the campus-life issue of greatest concern. Although recent studies have revealed that use of illegal drugs by college students has declined somewhat during the 1980's, it still appears to be a major problem, as well.

There is also a link between substance abuse and criminal activity on the college campus. One study reported that on campus as much as one-

Figure 24
Percent of New York Institutions that Provide
Training to Students and Faculty on Crime Prevention



half of the assailants in courtship violence had been drinking, and campus security personnel regularly report that alcohol is a factor in a large part of campus violence. A Towson State University study found that more than one-half of the people committing campus vandalism had been drinking.

According to the responses to the questionnaire for this Progress Report, almost all New York institutions have a written disciplinary policy for students concerning on-campus use of illegal drugs (95 percent) and the under-age use of alcohol (91 percent). Fewer institutions have a written disciplinary policy covering off-campus use of illegal drugs (29 percent) and under-age use of alcohol (21 percent) (see Figure 25). Similarly, while 82 percent have a written disciplinary policy for faculty and staff concerning on-campus use of illegal drugs, only 19 percent have a written disciplinary policy concerning off-campus use.

The Progress Report questionnaire responses also revealed that almost all institutions in the State provide education on the abuse of drugs (91 percent) and alcohol (93 percent). About one-quarter said that this education is mandatory (see Figure 26). About 40 percent reported that they provide treatment services for drug and alcohol abuse -- available to students, faculty, and other staff.

AIDS.

AIDS is a problem affecting all Americans, but especially people of college age. According to the Centers for Disease Control, almost 25 percent of all Americans who have been diagnosed with Acquired Immune Deficiency Syndrome since 1981 are in their twenties. Until now, the disease has been largely centered in the homosexual and bisexual male population, but the rate of heterosexual cases is on the rise. One researcher has predicted that by 1991, AIDS will be the major killer of young people.

Because AIDS is incurable at present, the major strategy for preventing the spread of the disease has been public health education. College

Figure 25
Percent of New York Institutions that Have a Written Disciplinary Policy Concerning Use of Illegal Drugs and Under-age Use of Alcohol by Students

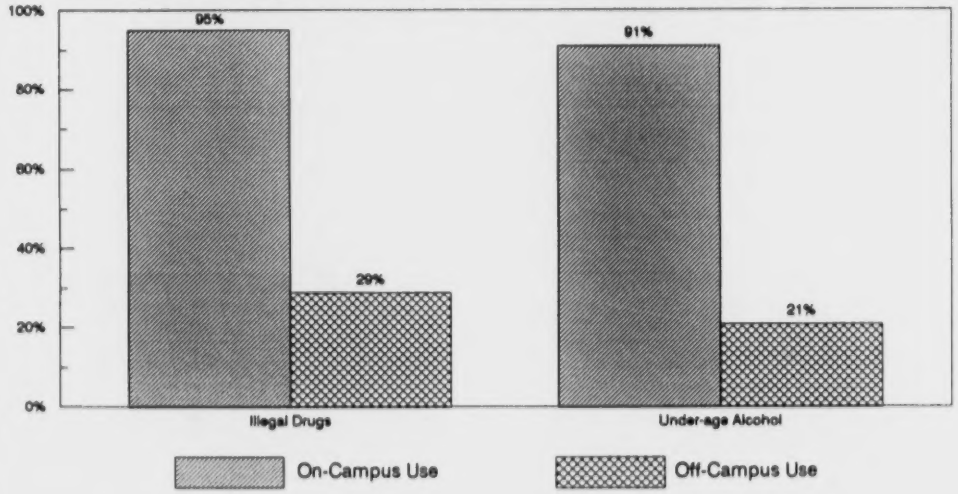
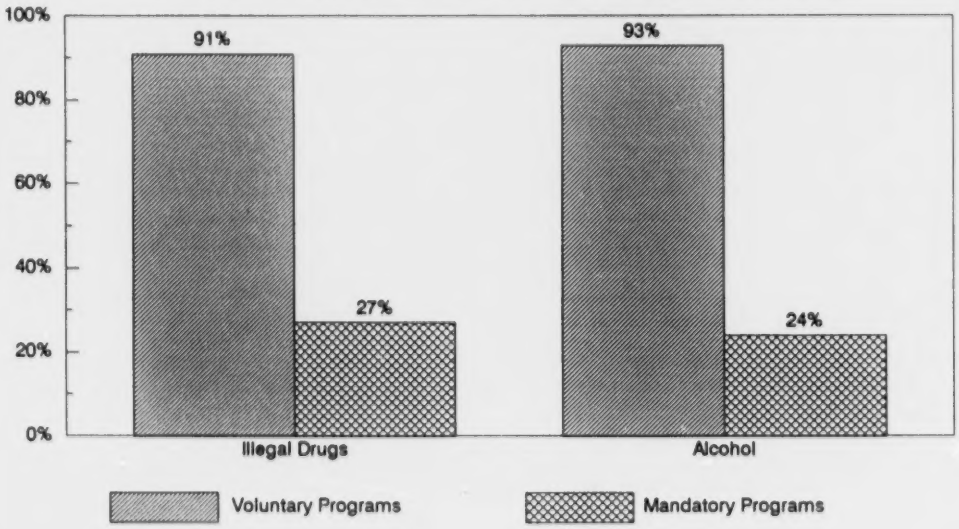


Figure 26
Percent of New York Institutions that Provide Education to Students on Abuse of Drugs and Alcohol



and university students have been targets of this information because they are sexually active. However, research has found that although college students are aware that AIDS is contracted through sexual contact, they generally are not concerned about contracting AIDS. For example, researchers have found that the use of condoms is low among sexually active college students. They tend to view AIDS as happening to people not like themselves. When college students become aware that they might be at risk, they tend to change their sexual behavior. Therefore, researchers are calling for more specific education programs, emphasizing the risk of AIDS among young people and within the heterosexual community.

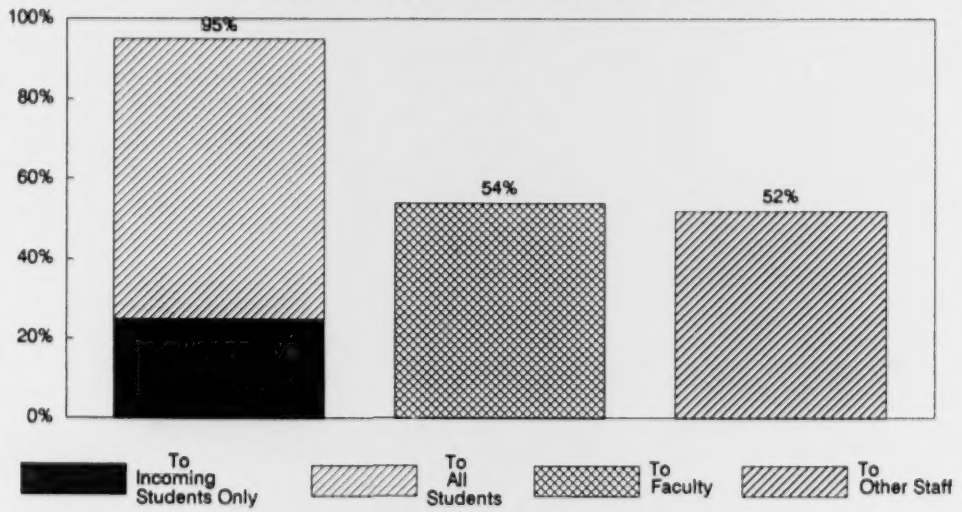
Almost all New York colleges and universities provide AIDS education to their students and over one-half provide it to faculty and other staff members. According to the responses to the questionnaire, 95 percent of New York institutions provide education about AIDS to their students -- three-quarters to all students and 20 percent to in-coming students only. Fifty-four percent provide it to faculty and 52 percent to other staff members (see Figure 27).

A survey of representatives of 69 New York postsecondary institutions who were invited to the Department's April 1990 conference, "Facing the AIDS Crisis -- Postsecondary Concerns," provides additional information on the scope of activities at colleges and universities in New York. (Fifty-two institutions responded to the survey.) Two-thirds of these institutions provide formal AIDS programs to students, 46 percent to faculty, and 37 percent to administrators. A higher percentage -- 86 percent -- provided special seminars in which speakers provided information on AIDS. Institutions also said that AIDS information is also provided within established curricula -- 76 percent in health sciences courses, 23 percent in teacher education courses, 61 percent in science courses, and 38 percent in humanities courses.

According to the AIDS conference survey, over half of the institutions provide AIDS counseling to students and 35 percent provide counsel-

Figure 27

Percent of New York Institutions that Provide Education on AIDS to Faculty, Students, and Other Staff



ing to faculty and administrators. Few institutions offered AIDS testing, however; only 19 percent offered it to students and only 10 percent offered it to faculty and administrators. Eighty-one percent of institutions make referrals to other agencies for persons who have AIDS and 45 percent offer risk assessment related to AIDS for the college community at on-campus health service clinics. Over one-half (56 percent) of responding institutions believed that the local community had adequate resources for AIDS testing and counseling.

Assuring a healthy campus environment is essential to permit students to learn and mature as they should during their college years. The problems associated with quality of life on campus -- crime, drug and alcohol abuse, racial and gender discrimination, AIDS -- have deep roots that originate beyond the gates of the University. However, all institutions in our society have an obligation to address these problems, particularly those that have the responsibility for educating our young people. In all of these areas, large proportions of New York institutions of higher education have implemented polices and programs. But, more has to be done, and institutions are urged to examine these issues in a comprehensive manner. The Department is sponsoring a statewide conference on the topic in the spring of 1991. We expect to examine thoroughly the issue of campus climate in the next Statewide Plan. In that context, specific Regents policies and recommendations will be developed in consultation with the colleges and universities of The University of the State of New York.

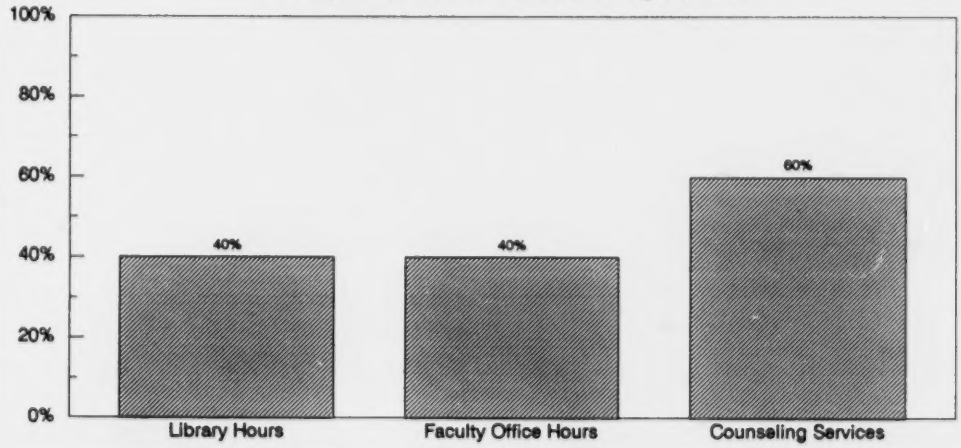
Special Services to Students

As colleges and universities seek to serve nontraditional students, including larger numbers of older students with job and family responsibilities, they should accommodate their special needs through convenient scheduling of classes, extended library and office hours, and the provision of special services, such as child care.

Convenient Scheduling.

According to responses to the questionnaire, about 40 percent of New York institutions said that there is a need to increase the availability of faculty and their office hours. The same percentage said that there is a need to increase the number of hours the campus library is open and professionally staffed. Sixty percent said that there is a need to increase the availability of coun-

Figure 28
Percent of New York Institutions that
Expressed Need to Increase Library Hours,
Faculty Office Hours, and Counseling Services



seling services on their campuses (see Figure 28).

Most New York institutions said that, since 1985-86, faculty availability remained about the same for students attending at nontraditional times -- after 6:00 p.m. on weekdays (81 percent) and on weekends (90 percent). A majority also said that the number of hours the campus library is open after 6:00 p.m. on weekdays (55 percent) and on weekends (60 percent) remained about the same. Forty-two percent increased library hours after 6:00 p.m. on weekdays and 36 percent increased them on weekends. Forty-five percent of institutions said that the availability of counseling services increased after 6:00 p.m. on weekdays; however, only about one-fifth (22 percent) said that the availability of counseling services on weekends similarly increased (see Figures 29 and 30).

Health Care Services.

According to this Progress Report's questionnaire, nearly all New York institutions (82 percent) provide health services on campus; a majority (57 percent) also make provision for off-campus student health services. Of those providing on-campus health services, more than three quarters (77 percent) said that the cost of providing the service increased between 1985-86 and 1988-89, and over half (54 percent) of those making provision for off-campus health services said that the cost increased.

Child Care Services.

Responses to the questionnaire reveal that fewer than half of the institutions (44 percent) provide child care services for the benefit of their students, and only about one-third (36 percent) provide it for faculty. The total figures mask sector differences -- 74 percent of SUNY and 90 percent of CUNY institutions offer child care to their students, compared to 24 percent of independent institutions and 16 percent of proprietary institutions (see Figure 31, below). Seventy percent of SUNY institutions also make child care services available to faculty members, while 10 percent of CUNY institutions and 26 percent of independent institutions make this service available to faculty. No proprietary institutions offer child care to faculty members.

Of the institutions that provide child-care services, only four percent (four institutions) said that they did not charge a fee for it. About half (52 percent) charge a weekly fee of between $50 and $99 per child; about one quarter (26 percent), less than $50 per child; and almost one fifth (19 percent), over $99 per child. The bulk of SUNY institutions (41 percent) charge a weekly fee of $50 to $74 per child, while the bulk of independent institutions (43 percent) charge $75 to $99 per child. CUNY institutions did not follow the general pattern -- 89 percent of CUNY institutions charge less than $50 per child.

Outreach Efforts

Voluntary Community Service Programs.

The Carnegie Foundation report called for a caring campus community. "The goal of educators should be to help students see that they are not only autonomous individuals but members of a larger community to which they are accountable." The report specifically urged that all students be encouraged to participate in voluntary community service programs as an important part of the undergraduate experience.

A large number of New York's colleges and universities already coordinate the voluntary efforts of their students to provide community service. Responses to the questionnaire revealed that almost two out of three institutions (64 percent) have an office or staff person to coordinate, assist, or encourage voluntary efforts to provide community service by students; about one-third have an office or staff person to coordinate such efforts by faculty (37 percent) and other staff (33 percent) (see Figure 32).

These institutions estimated that a total of 43,076 students participated in voluntary community service activities during 1988-89. Most of them (26,553, or 61 percent of students that participated) were at independent institutions. At SUNY institutions, 15,094 students participated

Figure 29
Percent of New York Institutions that
Reported Increase, Decrease, or No Change in
Faculty Office Hours and Library Hours, 1985-1989

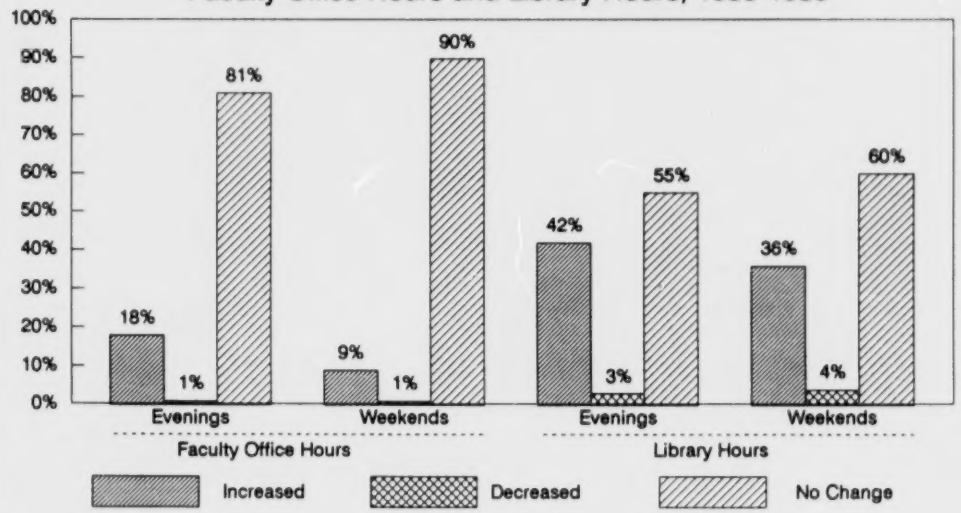


Figure 30
Percent of New York Institutions that
Reported Increase, Decrease, or No Change in
Counseling Services Availability, 1985-1989

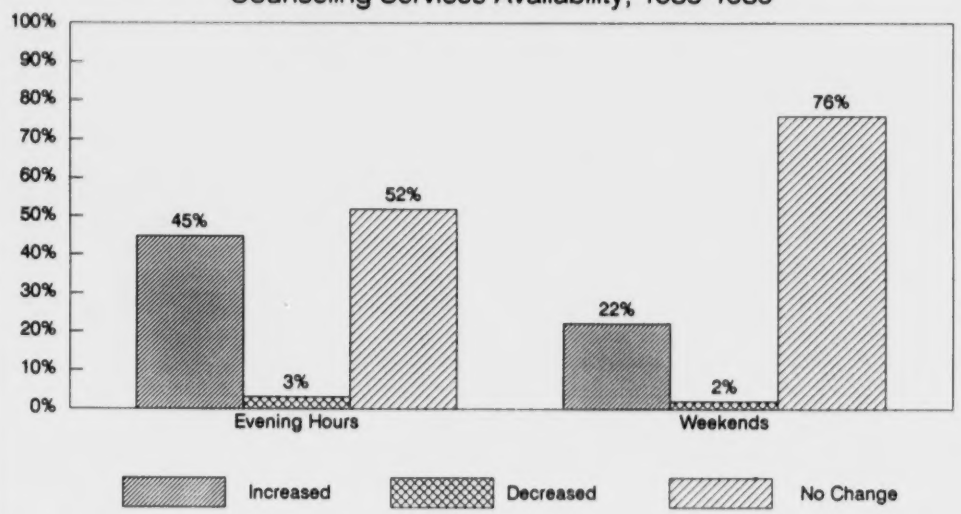


Figure 31
Percent of Institutions by Sector
Providing Child Care Services to Students,
1989-90 Academic Year

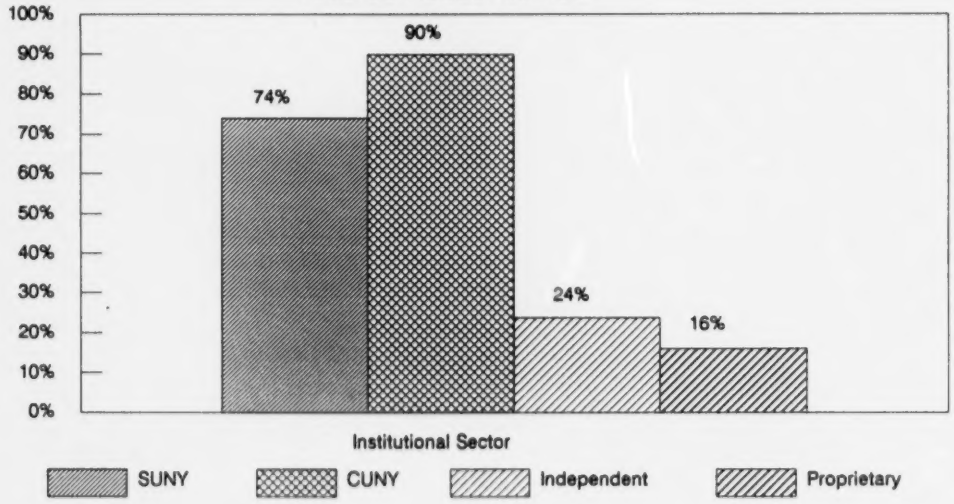


Figure 32
Percent of New York Institutions that
Coordinate Voluntary Community Service Efforts
of Students, Faculty and Other Staff

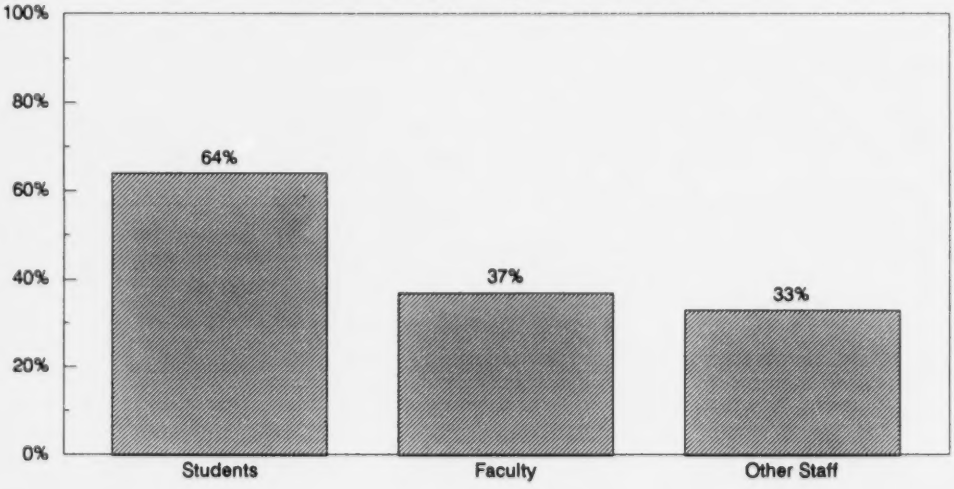
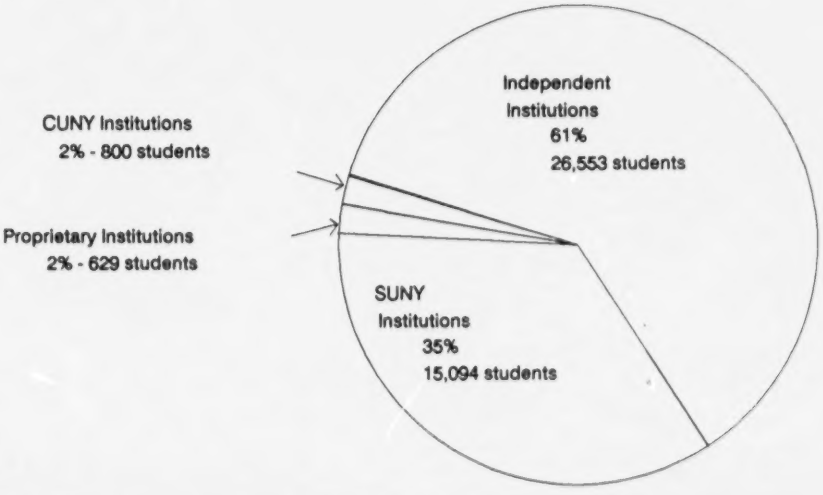


Figure 33
Students Participating in Voluntary Community Service Programs by Sector, 1988-89 Academic Year



in voluntary community service activities (35 percent); at CUNY institutions, 800 students participated (two percent); and at proprietary institutions, 629 students participated (two percent) (see Figure 33).

Service to Cultural Institutions.

The 1988 Plan pointed out, "The arts, among New York's greatest assets, enhance the quality of life and strengthen the development of value systems." It argued that colleges and universities should "reach out to other cultural institutions in our communities, including libraries and museums, to enrich the lives of their students and of the wider community." In the Plan, the Regents called on them "to consult with museums, libraries, and other cultural institutions in the State to determine their needs for preservice and inservice education of professional staff, and provide programs to meet those needs."

A number of degree-granting institutions in the State provide programs specifically geared to students interested in managing the State's cultural institutions. Eleven offer separately registered programs in arts management or museum administration. Eight offer master's degree programs in library science leading to New York State certification as a public librarian. Seven of them also offer advanced certificate programs for librarians interested in obtaining a specialization. Although Columbia University plans to close the State's only doctoral program in library science, both the State University at Albany and the State University at Buffalo have requested authorization for new doctoral programs in the field. The proposed program at State University at Albany, a Ph.D. program in information science, was approved by the Regents in June 1990 and by the Governor in July.

When considering all graduate institutions in the State, however, few provide in-service post-baccalaureate programs to professional employees of the State's cultural institutions, according to responses to the questionnaire. Only 14 percent provide such in-service education to professional employees of libraries and museums,

Figure 34
Percent of New York Graduate Institutions that Consult with Cultural Institutions to Determine In-Service Educational Needs and Percent that Provide In-Service Post-Baccalaureate Programs

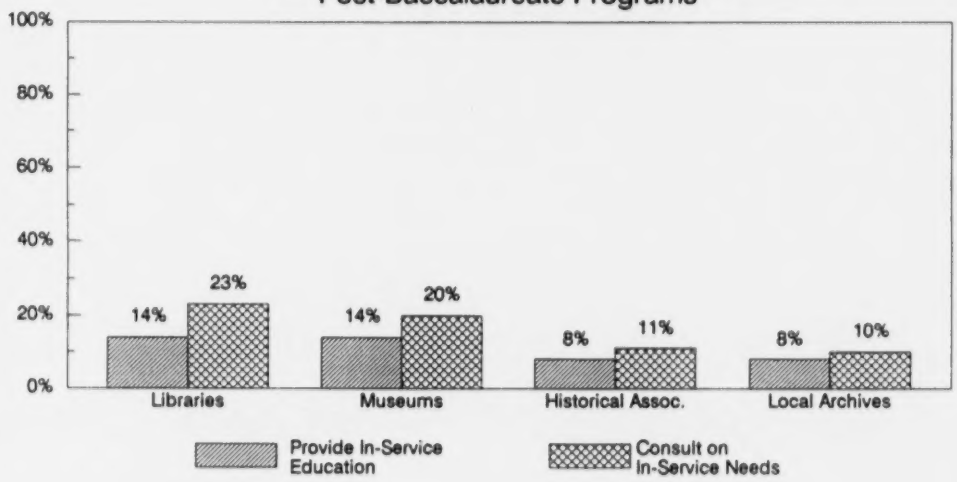
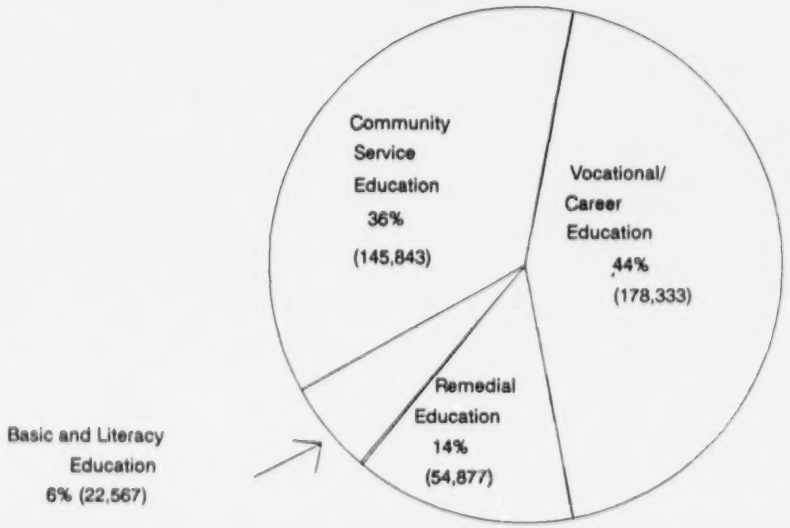


Figure 35
Noncredit Course Registrations by Area of Study, Fall 1989


Community Service Education 36% (145,843)
Vocational/ Career Education 44% (178,333)
Remedial Education 14% (54,877)
Basic and Literacy Education 6% (22,567)

and only 8 percent provide it to professional employees of historical associations and local archives. Low proportions of graduate institutions also said that they consulted with cultural institutions to determine the in-service educational needs of their professional staff -- only 23 percent consulted with libraries, 20 percent with museums, 11 percent with historical associations, and 10 percent with local archives (see Figure 34).

Service Through Noncredit Education.

Many New York colleges and universities provide service to the surrounding community by providing opportunities for noncredit study. According to responses to the questionnaire, nearly three-quarters of institutions (72 percent) offer noncredit study. Those that could provide a count of noncredit course registrations by subject area (137 of 156 institutions that offer noncredit study) reported 401,620 course registrations in the fall of 1989.

As may be seen in Figure 35, most of the course registrations are in vocational/career education (178,333 or 44 percent) and community service education (145,843 or 36 percent). (Community service education includes any noncredit course work not included in the other categories and not recreational in character.) Fourteen percent is in remedial education (54,877), and six percent is in basic and literacy education (22,567).

Noncredit enrollment has increased rapidly at degree-granting institutions in recent years. Between the fall of 1987 and the fall of 1989, course registrations grew by 16 percent, from 347,179 to 401,620, according to the questionnaire. The area of greatest growth is remedial education, which increased by 30 percent between 1987 and 1989. Basic and literacy education grew by 22 percent, community service education by 20 percent, and vocational/career education by 8 percent (see Figure 36).

Data from the Higher Education Data System also show that noncredit enrollment at colleges and universities increased significantly throughout the 1980's. (These data are nonduplicated enrollment as opposed to questionnaire data which asked for course registrations.) Between 1980 and 1988, noncredit enrollment at colleges and universities increased by 93 percent, from 134,652 to 260,190 (see Table 12, below).

Figure 36
Increase in Non-Credit Course Registrations
by Area of Study
Percent Change - 1987-89

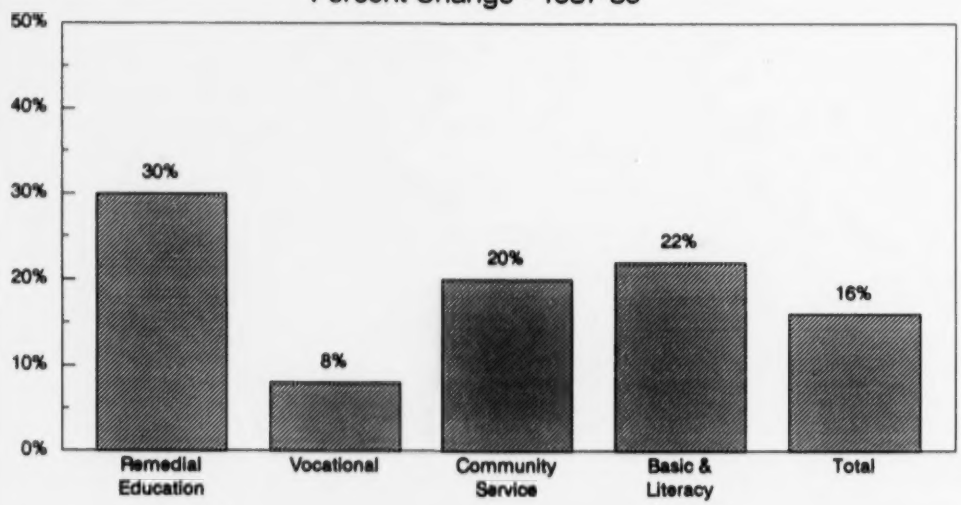


TABLE 12

NONCREDIT ENROLLMENT IN POSTSECONDARY INSTITUTIONS BY SECTOR NEW YORK STATE 1980-81 TO 1988-89

Year	Noncredit Enrollment						
	SUNY		CUNY				
	Community Colleges	All Other	Community Colleges	All Other	Independent	Proprietary	Total State
1980-81	31,567	16,908	13,941	7,995	62,425	1,816	134,652
1981-82	36,703	17,865	14,447	10,295	60,191	804	140,305
1982-83	39,446	19,835	12,870	16,083	61,400	1,602	151,236
1983-84	43,467	19,058	13,227	16,023	70,352	1,525	163,652
1984-85	42,084	33,552	13,744	16,108	67,533	1,930	174,951
1985-86	50,751	41,571	15,601	13,505	69,911	2,031	193,370
1986-87	63,397	41,890	19,346	16,460	74,073	2,021	217,187
1987-88	79,942	55,243	19,675	17,654	80,845	1,468	254,827
1988-89	83,011	58,109	24,275	13,272	80,669	854	260,190

Source: NYSED, Office of Postsecondary Education Policy Analysis
Higher Education Data System

CHAPTER IV

ASSISTING IN THE ECONOMIC RESURGENCE OF NEW YORK STATE

In the 1988 Plan, the Regents said, "The economy of New York State is influenced significantly by the quality of the educational preparation its residents receive and by the success achieved by its colleges and universities in advancing the frontiers of knowledge. Postsecondary institutions should marshal their resources to promote New York's economic development. They should try to match the needs of their students with those of society."

This chapter seeks to assess the progress that has been made in assisting in New York's economic resurgence. It is divided into three major sections:

- **(1) preparation of scientists, engineers, and technicians,**
- **(2) research and development, and**
- **(3) meeting work force needs.**

Preparation of Scientists, Engineers, and Technicians

Supply and Demand.

The supply of scientists, engineers, and technicians has become the lifeblood of economies dependent on scientific knowledge and technological development. Economic development patterns suggest that this dependency is going to intensify dramatically over the next decade. By the year 2000, the academic and non-academic nationwide demand for these occupations is expected to exceed the 1986 demand by 36 percent. This rate translates into a projected national need for an additional 600,000 science and engineering professionals in industry alone. The quality and quantity of future scientists and technical personnel have become priorities for leaders in government, education, and industry. Recognizing the importance of the education of scientists, engineers, and technicians to the State's future, and following a recommendation in the January 1989 Report of the Advisory Task Force on State Support for High-Technology Research that Lieutenant Governor Lundine chaired, Governor Cuomo convened the Governor's Conference on Science and Engineering Education, Research and Development in December 1989 to develop a statewide strategy to ensure the State's preeminence in science and technology in the 1990's and beyond.

The colleges and universities of The University of the State of New York have always produced a disproportionately large number of technically trained graduates. Table 13 shows that while the number of science and technology degrees at all degree levels was slightly higher in 1988-89 than in 1980-81, it has declined markedly from its peak in 1983-84. The table also reveals that there have been important differences among disciplines and levels. The only substantial growth was in computer and information sciences and, to a lesser extent, data processing technologies. In fact, the increases in these areas alone account for all of the total growth in degrees conferred over the period. Mathematics and engineering also increased, but the improvement was not as dramatic. On the downside, the physical sciences and the biological sciences, while remaining steady at the master's and doctoral levels, experienced significant declines at the baccalaureate level, as did mechanical and engineering technologies at the associate degree level. Enrollment data reflect these same basic trends, but are not as useful for projecting employment rates. In addition, the State has added several new programs in the sciences and engineering in recent years. Table 18, in Chapter V, shows that

since the beginning of the 1988-89 academic year, New York colleges and universities have registered 20 new baccalaureate programs in the physical sciences, 17 in the biological sciences, 13 in computer and information sciences, 13 in engineering, and 5 in mathematics.

Will the number of degrees be sufficient to meet future employment needs for scientists, engineers, and technical personnel? Both national and State data suggest that the numbers of undergraduate and graduates degrees conferred will be grossly inadequate if they do not increase from current levels. According to the National Center for Education Statistics, the number of baccalaureate degrees conferred between 1980-81 and 1986-87 declined by 11.8 and 16.6 percent, respectively, in the biological sciences and the physical sciences, and increased by 16.6 percent in engineering. During this same period, the National Science Foundation reports that the number of those employed in science and engineering jobs increased at a rate almost twice that for all workers, and projects that between 1988 and 2000 employment opportunities for these jobs will increase by about 34 percent. Baccalaureate conferral rates for the State follow a similar pattern to the national rates. Table 13 shows that, in the biological and physical sciences between 1980-81 and 1987-88, the declines were 15.1 percent (-608 degrees) and 27.5 percent (-530 degrees), respectively, while the increase in engineering degrees was 9.7 percent (556 degrees). Those trends continued in 1988-89.

More ominous long-term national and State supply problems exist at the graduate level, particularly with the conferral of doctorates. Nationally, NSF projects that the current number of new Ph.D.'s will meet demand through 1995. After that, because of the increasing demand for Ph.D's in non-academic jobs and the expected shortfall of academic scientists needed to replace retiring faculty members, serious shortages are expected to persist at least through 2010. The Association of American Universities' recent report, The Ph.D. Shortage: The Federal Role, also projects these shortages, estimating annual shortages of approximately 7,500 beginning in 2000. It also suggests that shortages will be more severe in academe, primarily because historically most Ph.D. recipients have worked outside of academic institutions. These shortages are projected despite the fact that the number of doctorates conferred between 1980-81 and 1986-87 actually increased by 49.3 percent in engineering and 16.9 percent in the physical sciences. In New York, the number conferred in engineering and the physical sciences also increased between 1980-81 and 1987-88, by 57.6 percent (144 degrees) and 9.4 percent (28 degrees) respectively (see Table 13). But declines in doctorates in the biological sciences and in baccalaureates in engineering and the physical sciences began in the mid 1980's across the nation. Ph.D. shortages are likely to occur in the State in proportion to the projected national shortages. Moreover, even if the State's conferral rates remained relatively stable and the State were to be relatively rich in doctorates awarded in the 1990's, the implications for both New York industry and academe would be uncertain because a significant percentage of Ph.D. graduates typically leaves the State (e.g., 61 percent of the known 1989 science and engineering Ph.D. graduates).

The principal source of training for doctoral students in the sciences and engineering is their participation in faculty-directed research projects. The predominant source of funds for such research is the Federal government. In recent years, there has been growing competition for the limited number of grants made by the National Science Foundation and the National Institutes of Health. The decision by NIH to accede to academe's call for fewer but larger multi-year grants has exacerbated competition for NIH funding. On the other hand, NSF's recent decision to include the training of graduate students an explicit part of its grant guidelines may result in increased numbers of doctoral students participating in NSF-funded research projects. (See the discussion of Research and Development, below.)

Enrollment Changes.

In addition to providing important information about the make-up of the population of prospective scientists, engineers, and technicians,

TABLE 13
DEGREES CONFERRED BY INSTITUTIONS OF HIGHER EDUCATION IN SCIENCE AND TECHNOLOGY-RELATED PROGRAMS NEW YORK STATE 1980-81 TO 1988-89

Subject Area	Associate Degrees	Baccalaureate Degrees	Master's Degrees	Doctoral Degrees	All Degrees Conferred
Biological Sciences					
1980-81	--	4,034	697	401	5,132
1983-84	--	3,420	638	382	4,440
1987-88	--	3,426	693	405	4,524
1988-89	--	3,293	681	388	4,362
Computer and Information Sciences					
1980-81	--	1,728	518	23	2,269
1983-84	--	3,814	1,034	30	4,878
1987-88	--	3,857	1,557	57	5,471
1988-89	--	3,250	1,551	74	4,875
Engineering					
1980-81	--	5,750	1,758	250	7,758
1983-84	--	6,907	2,096	272	9,275
1987-88	--	6,306	2,303	394	9,003
1988-89	--	6,245	2,244	388	8,877
Mathematics					
1980-81	--	1,177	349	85	1,611
1983-84	--	1,336	327	88	1,751
1987-88	--	1,580	488	86	2,154
1988-89	--	1,461	515	79	2,055
Physical Sciences					
1980-81	--	1,928	458	298	2,684
1983-84	--	2,036	480	309	2,825
1987-88	--	1,398	586	326	2,310
1988-89	--	1,320	552	362	2,234
Data Processing Technologies					
1980-81	1,723	--	--	--	1,723
1983-84	3,594	--	--	--	3,594
1987-88	2,535	--	--	--	2,535
1988-89	2,104	--	--	--	2,104
Mechanical and Engineering Technologies					
1980-81	4,953	--	--	--	4,953
1983-84	5,172	--	--	--	5,172
1987-88	4,232	--	--	--	4,232
1988-89	3,772	--	--	--	3,772

Source: NYSED, Office of Postsecondary Education Policy Analysis
Higher Education Data System

demographic trends in enrollment and conferral support the projection of supply problems. As discussed in Chapter I, the overall college enrollment in New York State is going to decline by 5.1 percent through 1994, then begin to increase. The decline will be steeper in the first few years; the number of full-time first-time students will drop by approximately nine percent between 1989 and 1992, before beginning to grow again. From the perspective of the supply problem, the declining rate of students entering the sciences and other quantitative disciplines is more important than the gradual decline of the overall college population because the employment demand for scientists, engineers, and technicians is increasing faster than the total U.S. employment rate. Using national data based on the plans of college-bound seniors who take the Scholastic Aptitude Test, the NSF documented that the number of students preparing for careers in science and engineering had declined from a high of 20 percent in 1983 to 13 percent in 1988. (No comparable data exist for New York State.) Excluding computer and information sciences and to a lesser extent mathematics and engineering, this figure is consistent with the significant drop in enrollment of full-time students in the natural sciences nationwide.

Issues of Quality.

There also have been concerns about the quality of entering students. National and international studies, as well as surveys from colleges and universities, have indicated repeatedly that entering students in mathematics and the sciences are not as well prepared as they were in the past. A 1987 study published by the Educational Testing Service, The Science Report Card, which is a continuation of the National Assessment of Educational Progress, concluded that only 41 percent of 17-year-olds have "some understanding of the design of experiments or any degree of specialized knowledge across the subdisciplines of science." Just one in 13 of the 17-year-olds attains "any degree of sophisticated understanding...a proportion that is substantially smaller than that needed for the future work force." The data for New York high school pupils in Regents courses provide some interesting contrasts. For example, over the 14 year period, 1975-89, about 80 percent of pupils taking Regents science and mathematics examinations passed. Of course, this cohort was more select than the cohort used in the ETS study. Moreover, the percentage of Regents diploma recipients taking sequences in mathematics and sciences was higher in 1989 than it had been in 1988 and previous years. However, the proportion of all high school graduates receiving Regents diplomas declined in 1989. Generalizations are difficult when using data that are not precisely comparable, but while scientific and mathematical literacy may be declining overall for New York State students, the performance of students who do take rigorous courses in these areas may be improving.

Underrepresented Minorities.

Perhaps the most worrisome long-term demographic trend is the enrollment disparity among racial and ethnic groups across all technical disciplines. The fastest growing populations are minorities who historically have studied mathematics, engineering, and the sciences at a lower rate than the general population. Using the physical sciences as an example (similar rates are also found in computer science, mathematics, and the life sciences), Table 14 provides a comparison of enrollment rates by racial/ethnic categories. The data show that the overall minority participation rate in New York is not improving and the disproportionate gaps among the various groups are widening. Part of this may be explained by a finding in the ETS study that Black and Hispanic 13- and 17-year olds are still, on average, four years behind white students in secondary school preparation.

The modest increases in non-white total enrollments are insufficient to compensate for the overall drop in the college-going population. Asian enrollments, while increasing significantly, represent a relatively small percentage of the population, so they will have only a minor impact on the overall supply problem. Instead, it is the low Hispanic and Black enrollment rates that present the most serious problems. Although the overall rates of 2.7 and 4.0 percent for Hispanics and Blacks, respectively, are consistent with past rates and with current national averages, the situa-

TABLE 14
RACIAL/ETHNIC DISTRIBUTION OF POSTSECONDARY ENROLLMENT IN THE PHYSICAL SCIENCES BY LEVEL OF STUDY NEW YORK STATE FALL 1980 TO FALL 1988

Level of Study and Year	Total Enrollment		Percent Distribution by Racial/Ethnic Category					
	Number	Percent	Black Non-Hispanic	Hispanic	American Indian or Alaskan Native	Asian or Pacific Islander	White Non-Hispanic	Non-Resident Alien
Undergraduate Enrollment								
1980	7,405	100.0	4.1%	2.5%	0.2%	2.9%	87.7%	2.6%
1984	6,921	100.0	4.9	3.1	0.3	4.0	85.1	2.7
1988	5,232	100.0	5.7	3.3	0.3	5.9	81.5	3.4
Graduate Enrollment								
1980	2,993	100.0	1.8	1.2	*	4.1	72.0	20.9
1984	3,222	100.0	1.8	2.1	0.3	5.0	67.4	23.4
1988	3,395	100.0	1.5	1.8	0.1	5.4	52.2	39.0
Total Enrollment								
1980	10,398	100.0	3.4	2.1	0.2	3.2	83.2	7.9
1984	10,143	100.0	3.9	2.8	0.3	4.3	79.4	9.3
1988	8,627	100.0	4.0	2.7	0.2	5.7	70.0	17.3

**Less than 0.1 percent.*

Source: NYSED, Office of Postsecondary Education Policy Analysis Higher Education Data System

tion in New York State is actually more severe because these groups are a larger share of both the current and projected work force. They also are a much larger proportion of the school and college populations (see Chapter II). The data also show that enrollment trends at the graduate level have reversed since 1984, so the number of Blacks and Hispanics in higher-paying scientific and technical jobs may actually decrease in the next decade. The National Research Council found that Blacks accounted for only 113 of the 9,600 doctorates awarded nationwide in the natural sciences and engineering in 1989, a 1.39 percent share. In New York State in 1987-88, the number was 10 out of 1,028 Ph.D.'s awarded by State University and the independent universities, approximately 1.0 percent. As the Regents 1984 paper, Increasing Minority Access to the Licensed Professions, pointed out, there is a pattern of disproportionate rates of degree attainment for minorities reflected at every stage in higher education, with an ever-widening gap at the completion of four-year college programs and entering and completing graduate school.

Lack of minority participation is likely to cre-

ate greater shortages of technical personnel. It is important to note two other factors. Women have made significant gains in fields other than science and engineering where for the first time they earned more than 50 percent of the doctorates nationwide in 1989. In New York in 1987-88, they received 40.7 percent of the 3,550 doctorates conferred in all fields, and their percentage representation in the biological sciences, mathematics, the physical sciences, and engineering are 42.5, 22.1, 17.8, and 6.6 percent respectively. But, because they usually are white, women's increased participation has not reduced the disparity among minority groups. A more important factor is the disproportionate number of non-resident aliens in the sciences -- particularly at the graduate level where they account for an extraordinary 39 percent of total enrollment. Their contribution has, in effect, largely masked the lower percentages of Americans in engineering and the sciences.

Many New York colleges and universities have responded to the need for increased minority participation and performance in the sciences and related technical fields. Two of the more important State programs are the Science and Technology Entry Program (STEP) and the Collegiate Science and Technology Entry Program (CSTEP). These were created by Chapter 31 of the Laws of 1985 and Chapter 285 of the Laws of 1986, respectively, following identification of the problems in Increasing Minority Access to the Licensed Professions and the 1984 Statewide Plan. STEP assists colleges to provide services to underrepresented minority and economically disadvantaged secondary school students to acquire the skills needed to undertake collegiate study in scientific, technical, and health-related fields. CSTEP helps similarly disadvantaged minority undergraduate and graduate students complete programs in these fields. The programs provide a variety of academic and non-academic support services such as counseling, tutoring, supplemental course work, prescriptive test work, and cultural enrichment activities. In 1988-89, 41 postsecondary institutions participated in the STEP program, serving 6,707 high school students, and 43 institutions participated in the CSTEP program, serving 4,598 undergraduates. The STEP and CSTEP programs were funded at about $10.7 million in that year. Funding remained at about that level in 1990-91.

Research and Development

Research and Development Expenditures.

The cultivation of science and technology is essential in the economic growth of modern industrial societies. Empirical studies show that the level of research and development (R & D) is related closely to the rate of productivity growth, and that the marginal rate of return from investment in R & D is high, particularly for basic research. Current business and economic trends suggest that R & D will play an even larger role as state, national, and international economies continue to become more dependent on technological development. According to the National Science Foundation, total R & D investments grew 44 percent since 1980, compared to only 17 percent in the 1970's. During the same period, academic R & D expenditures grew by an even faster rate, 49 percent, providing additional evidence not only of the importance of general R & D, but also of the type of specialized R & D provided by academic laboratories. As a consequence, the ability of colleges and universities to perform scientific research increasingly is being viewed as a top priority for ensuring social and economic development.

Academic research also is of vital importance as the principal source of graduate education of scientists and engineers. In turn, those graduate students become the next generation of scientists and engineers in academe, government, and industry. The hands-on apprenticeship afforded to graduate students working with scientists in their research laboratories encourages them to hone their own research skills and to apply theoretical learning to real problems. It is essential, therefore, that we attract to New York colleges and universities the most talented graduate students in order to assure that we can get the most talented researchers.

Full-time doctoral students at New York's

major research universities are supported largely through fellowships and assistantships paid out of funded research grants. The availability of such funds is likely to have been an important element in the ability of aid for graduate study in New York to keep pace with consumer cost increases (see the discussion of Reducing Financial Barriers in Chapter II above). As the discussion of the Preparation of Scientists, Engineers, and Technicians above notes, competition for NSF and especially NIH grants is growing. On the other hand, NSF guidelines now actively encourage training of graduate students within NSF-funded research projects.

To complement such aid, the Regents have sought enactment by the State legislature of bills to provide additional fellowships and assistantships for doctoral study in New York in engineering, mathematics, and the physical sciences. Those bills have not been enacted.

Research and Development in New York.

By any measure, New York State is a leader in academic research and development. It ranks second among the states on many indicators, including graduate enrollment, the amount of money it provides universities, and the number of practicing engineers and scientists. In addition, it has more higher education research centers, 15, than any other state, and two of its institutions, Cornell and Columbia, were among the nation's top 20 universities in total R & D spending in 1988. Table 15, derived from several NSF reports, provides two other important comparisons -- R & D expenditures and federal obligations for R & D -- that illuminate the strong position of New York's academic research capacity relative to other states. The State has consistently been second in the nation (after California) both in terms of total science and engineering research expenditures of doctorate-granting institutions and in terms of federal obligations for science and engineering research and development at colleges and universities. New York has consistently made about ten percent of the expenditures and received about ten percent of the support (see Table 15). Many analysts have argued that while this rate does imply constancy in the State's effort, it may not be adequate to meet future scientific and technological demands. Table 15 also shows that research expenditures at New York universities have grown more slowly than in eight of the top ten states and that growth of federal support to them has been slower than in five of the ten. In addition, New York State is becoming less competitive in capturing federal dollars in some fields, particularly biomedical research. The 1989 Report of the Advisory Task Force on State Support for High-Technology Research, chaired by Lieutenant Governor Lundine, pointed out that "Ten years ago, New York scientists received more research grants from the National Institutes of Health than any other state. Today New York trails far behind California and Massachusetts" and that "In the last five years, NIH research grants to teaching hospitals and universities grew 77% in California and 68% in Massachusetts, but only 47% in New York."

Regardless of how competitive the relative rate is, New York State has made a major commitment to R & D over the past ten years. The New York State Science and Technology Foundation's Centers for Advanced Technology program now invests $10 million annually in ten research universities across the State. This program alone has obligated a total of $55 million in State funds over the past six years. Similarly, the Foundation's R & D Grants program invests approximately $600,000 to $1,000,000 annually for research projects at colleges and universities. State funds support academic R & D in a variety of other ways, including direct program funding to universities from State agencies such as the Urban Development Corporation, the Energy Research and Development Authority, and the Department of Health; tax-exempt financing from the Dormitory Authority for facilities and equipment; the Graduate and Research Initiative program at State University; research and equipment aid in CUNY's and SUNY's budgets; and the Einstein Chairs. The Lundine report estimated that these and other expenditures for academic science and engineering research and development were approximately $1 billion in 1985 (about half was for medical/health research). Clearly, the State has

TABLE 15

SCIENCE AND ENGINEERING R&D EXPENDITURES
(AT DOCTORATE-GRANTING INSTITUTIONS)
(in millions)

	CA	NY	TX	MA	PA	IL	OH	NC	CT	NJ	US
1988	1,719.7	1,245.1	987.5	790.8	675.1	546.3	382.1	371.2	255.0	243.9	13,243.1
% of Total	13.0%	9.4%	6.7%	6.0%	5.1%	4.1%	2.9%	2.8%	1.9%	1.8%	100.0%
1979	653.4	534.6	309.8	339.2	247.8	216.1	160.5	117.4	104.9	76.6	5,271.6
% of Total	12.4%	10.1%	5.9%	6.4%	4.7%	4.1%	3.0%	2.2%	2.0%	1.5%	100.0%
Change	1,067.3	710.5	577.7	451.6	427.3	330.2	221.6	254.7	150.1	176.3	7,971.5
% Change	163.6%	132.9%	186.5%	133.1%	172.4%	152.8%	138.1%	217.0%	143.1%	218.4%	151.2%

FEDERAL OBLIGATIONS FOR SCIENCE/ENGINNERING R&D
TO UNIVERSITIES AND COLLEGES
(in millions)

	CA	NY	MA	PA	TX	IL	NC	OH	CT	NJ	US
1988	1,109.9	794.9	545.1	452.3	414.4	301.3	246.7	210.6	176.0	104.9	7,717.1
% of Total	14.4%	10.3%	7.1%	5.9%	5.4%	3.9%	3.2%	2.7%	2.3%	1.4%	100.0%
1982	626.6	464.6	373.0	236.2	232.2	190.9	125.7	129.2	106.1	56.2	4,552.5
% of Total	13.8%	10.2%	8.2%	5.2%	5.1%	4.2%	2.8%	2.8%	2.3%	1.2%	100.0%
Change	483.3	330.3	172.1	216.1	182.2	110.4	121.0	81.4	69.9	48.7	3,164.6
% Change	77.1%	71.1%	46.1%	91.5%	78.5%	57.8%	96.3%	63.0%	65.9%	86.7%	69.5%

Source: NYSED Office of Postsecondary Education Policy Analysis.
Data from National Science Foundation

established an R & D presence that once used to be almost solely the province of the Federal government. The Lundine report says that "The extraordinary state support for high-technology research projects during the past six years has begun to enable New York's technological research universities to enhance their research grant acquisition, and faculty and student recruitment abilities." It urged the State to "advance the economic development and vitality of the State by supporting scientific and technological research and development activities" and recommended to the Governor a process for doing so.

New York colleges and universities assume a higher percentage of the R & D burden as well. While in recent years both the Federal government and industry have been decreasing their rate of R & D investments to about two percent, R & D performed by academic institutions have continued to grow, at about a six percent rate. In fact, the only continuous upward trend in R & D financing has been the increased investments of the institutions' own funds, which have almost doubled during the decade. The primary reason for this dramatic jump has been the declining federal share of R & D expenditures. In 1989, universities received federal support for 59 percent of their R & D activities, an 11 percent reduction from the 68 percent federal share in 1980. Table 16 shows the percentages of New York college and university expenditures going to research between 1979-80 and 1987-88. Caution should be used with these data, however, because universities do not define "research" uniformly.

Other indicators of institutional support for R & D provide additional evidence of education's increasing involvement. Nationally, university patents have doubled since 1980, according to the National Science Foundation. Reflecting this trend, the majority of major research universities in New York have patent policies in place and the responses to the questions for this Progress Report show that 32 percent of all the responding institutions that offer graduate education have licensed faculty discoveries for use in business. The larger research universities and the university systems now have offices devoted to technology transfer and information dissemination. Another important indicator of university commitment is the number of formal partnerships that have

TABLE 16
CURRENT FUNDS EXPENDITURES FOR RESEARCH
AS A PERCENTAGE OF TOTAL CURRENT FUND EXPENDITURES IN INSTITUTIONS OF HIGHER EDUCATION NEW YORK STATE
FY 1980-1988

Fiscal Year	Percent of Total Current Expenditures
1980	9.4%
1981	9.1%
1982	8.3%
1983	7.7%
1984	7.7%
1985	8.2%
1986	8.4%
1987	8.4%
1988	8.9%

Source: NYSED, Office of Postsecondary Education Policy Analysis. Higher Education Data Systems.

developed between New York universities and industry. Although cooperative arrangements existed before the early 1980's, both their total number and the amount of money currently involved are without precedent.

Problems Ahead.

Despite these commitments from the State and its colleges and universities, other conditions may present some serious problems in the 1990's for academic R & D in New York. In particular, State budget deficits have already begun to erode support for such programs as the Einstein Chairs and the Graduate and Research Initiative, and there are indications that these fiscal difficulties will continue through at least the early 1990's. Perhaps more serious is the low number of students enrolling in and completing postsecondary science, engineering, and mathematics programs -- particularly at the graduate level. Current data from the institutions do not anticipate improvement in the next few years. Likewise, neither the State nor the institutions seem to be in a position to do much about research equipment and facilities needs. A 1988 NSF report on Scientific and Engineering Research Facilities at Universities and Colleges found that only 61 percent of all space currently being used for research is "suitable" for most sophisticated research or "effective" for most uses. These data are consistent with the Department's 1986 equipment survey of New York colleges and universities, which reported that 90 percent of the responding institutions found that inadequate funding for the acquisition of new or replacement scientific instructional equipment had a negative effect on their instructional programs and, in addition, that equipment maintenance needs were a problem for approximately 75 percent of the institutions. There have been no major research facilities projects funded by the State since the passage of the Omnibus Economic Development Act of 1987.

External Influences.

Perhaps the greatest influence on academic research budgets in the future will come from factors beyond the control of the universities and the State. Four major trends within the Federal government and private industry will continue to have profound destabilizing effects on university R & D budgets. First, despite an increase in the total amount of R & D obligations nationwide, the nation's growth rate of R & D expenditures has declined from six percent in the period between 1981 and 1985 to an estimated two percent between 1985 and 1989. One result is that Japan and Germany are now spending twice the percentage of gross national product for non-defense R & D as is the U.S. Second, until recent events in the Middle East, it was thought that the thawing of the Cold War would shift Federal research policies away from national defense priorities, which currently account for 65 percent of the total Federal R & D budget, to civilian purposes. Although existing budget constraints at the Federal level make it impossible to speculate whether such a shift would mean an overall increase or decrease for academic research funding in New York institutions, an emphasis on non-military priorities may be positive for New York because, unlike Massachusetts and California, New York State overall is not as dependent on defense contracts. Third, the tendency of the Federal government to support "Big Science" projects such as the Supercollider and the Human Genome Project may siphon scarce scientific resources away from smaller, more general research grants that benefit the majority of research faculty.

Last and perhaps most significant in the long run for colleges and universities is the increasing relative share of industry's contribution to R & D. Although the Federal government historically has provided the majority of research funds, industry has increased its share to the point where each sector now contributes about 47 percent of total R & D expenditures. In terms of academic R & D, these sector adjustments have increased industry's share from approximately four percent in 1980 to almost seven percent in 1989. A possible implication for colleges and universities is increased pressure to do more applied research. Supporting this concern is the declining Federal share of academic R & D, which largely has been for basic research, and the switch in Federal funding patterns to civilian priorities. Although New York State's funds for R & D are substantially

smaller than either Federal or private funds, its priorities predominantly have been with applied research. Further complicating the speculation about industry's rising influence on academic research is whether proprietary restrictions will hinder the free transfer of information among institutions, a fundamental responsibility of academic research.

Meeting Work Force Needs

America's prosperity and its place in the world economy depend on how well Americans work. Employers say that the labor force's knowledge, skills, and abilities are more critical than ever. Therefore, the importance of education and training to economic development will continue to grow through the 1990's and into the "post-industrial" era of the 21st century. From an education and employment perspective, this new era will offer different problems and opportunities because of the continual transformations in the economy, technology, and demographics. Images of workers doing one standardized job requiring one skill no longer reflect reality. Colleges and universities therefore will have to base their work force preparation strategies and policies on two goals: flexibility for workers and responsiveness for institutions. They must provide education that will enable current and future workers to do a variety of jobs. The institutions must also be able to respond to the changing needs of business and industry in order to prevent projected shortages of workers. A quick review of projected economic and demographic changes in the next decade will reinforce the importance of these goals.

Job Trends.

Barring a major recession and using current productivity and growth rates, the number of jobs in New York State is projected to grow by about 16.6 percent by 2000. This rate is about 3 percent slower than the national average, but when considered with the 2.2 percent growth rate of New York's labor force, it means that the number of jobs is growing faster than the work force is growing. Of the new jobs created, data indicate that most will be in the information or service sector. Approximately 50 percent will be classified as medium- to low-skilled. Those requiring higher levels of education will increase the fastest. Currently, 54 percent of all jobs require education beyond high school; in the 1990's it is expected that 65 to 75 percent of jobs will require it. According to the National Center for Education Statistics the percentage may be even higher by 2000 because the fastest-growing occupations will require employees to have much higher mathematics, scientific, language, and reasoning capabilities than do current occupations.

The New York Work Force

New York State will experience very slow growth in the working-age population between now and the year 2000. Moreover, the labor force will have several distinguishing features: a declining number of younger workers, both relatively and absolutely; a disproportionately large number of older workers; and a different composition of new labor market entrants, three out of every four of whom will be women, minorities, and immigrants. As a consequence, there will be a significantly lower growth rate in the number of first-time, entry-level workers. New York will have 672,900 fewer 15 to 24 year old workers in 2000 than in 1985, a decline of 23 percent, two and one-half times the national rate. If this cohort is extended to age 34, the projected shrinkage is even more dramatic. In 1985, persons aged 16 to 34 comprised half of the nation's work force. That proportion will drop to 38 percent by 2000, which means that this group will shrink by 5 million workers during this decade. This cohort in New York State will not be larger than it is now until perhaps 2050. During this same period, the number of persons 35 and older in the State is projected to grow by more than 2 million by 2000.

Compounding the difficulties associated with the low number of new workers will be an extensive variation in educational attainment. Longitudinal studies have documented across-the-board declines and deficiencies in basic skills for all young adults. Of particular concern is the number of young workers who will not have had some training after high school. Currently, the postsecondary education participation rate is

about 75 percent for 18 year olds who have a high school diploma, but drops to around 50 percent of all 18 year olds. This rate reflects the relatively poor high school completion rates of minorities who will comprise a larger share of new workers (approximately 33 percent by 2000) and who are already underrepresented in most fields, particularly scientific, technical, and other occupations requiring advanced skills. Recent data show that Black and Hispanic youth have made marginal improvements in high school graduation and college enrollment rates, but existing educational disparities are projected to persist between minority and majority youth entering the labor force at least through the mid 1990's.

These convergent demographic and economic trends suggest the probability of labor and skill shortages during the 1990's. Although labor shortages present serious problems for the State if businesses begin to relocate, the greater concern currently is with skill shortages because unskilled workers will remain unemployable even under the most robust economic conditions. This is why economic developers and employers during the 1980's became more concerned with education, particularly with employment-related issues such as drop out rates and basic skills. Indeed, the New York State Business Council, which represents private sector employers, has made education its number one legislative priority.

General Work Force Preparation.

These data have three implications for colleges and universities in the 1990's. First, there will not be a need to alter substantially the basic skills required for work. Most employers argue that the best preparation for work, regardless of the specific job, is a solid foundation in literacy, communication skills, logic and reasoning, mathematics, science, and broad technological applications. Enhancing those basic skills should be the cornerstone of all employment-related education. Second, the demand for more worker retraining and upgrading will increase. The inadequate preparation of many entry level workers, continuing dislocations of workers from manufacturing jobs, slow employee turnover rates in the aging work force, and the ever-changing nature of jobs in a technology-based economy will require periodic formal education for every worker throughout his or her career. Third, job-specific training will need to include broader, occupation-wide skills. Painful job dislocations and the disappearance of entire occupational categories in the 1980's have underscored the importance of a broader preparation that goes beyond just short term training for specific jobs. This will be true even for jobs at the more technical end of the employment spectrum.

Community colleges are well situated to respond to these trends. In fact, they may become the dominant providers of employment and training services. These institutions have all of the necessary ingredients for training tomorrow's work force: a flexible structure that permits them to respond rapidly and efficiently to changing economic and social conditions; a variety of offerings from remedial courses in basic skills to degree-bearing education in a wide range of occupationally-related disciplines; matriculation policies that encourage learners at all levels of achievement; a learning atmosphere congenial to adults; existing linkages with local industries and the community; and a management style that can easily accommodate the customized training needs of businesses. Increasing community college enrollments since the mid-80's, particularly in noncredit courses (see Table 12 in Chapter III), provide evidence of their benefits. Not all of the noncredit enrollment is attributable to employment-related training, but it accounts for a significant part of the 136 percent increase in noncredit enrollments at community colleges between 1980-81 (45,508) and 1988-89 (107,286). (SUNY estimates that 75 percent of its noncredit enrollment is employment related.) These rates should remain steady for the next decade if technology and international competition continue to transform the economy. As Chapter I sets forth, between 1989 and 2005 headcount credit enrollments will decline less than two percent at SUNY community colleges and one percent at CUNY community colleges. There is even the possibility of significant enrollment increases if economic conditions worsen and the historic inverse relationship between employment and com-

munity college enrollment holds true. In virtually every scenario, colleges will be asked to provide more services, more often, to both adults and businesses.

Job-specific training and basic education programs have been two of the more important services community colleges and other higher education institutions have offered to individuals and industry. The following program descriptions provide information on the range and demand for these services. They only include data for programs administered by the Education Department, however, so they underestimate the absolute number of both institutions and individuals participating in these work force preparation programs. Many colleges provide remedial education and employer specific programs out of their own budgets. SUNY community colleges, for example, have provided training to 90,000 individuals through contract courses.

Employer Specific Training.

The Employer Specific Skills Training program was designed to respond to the job-specific training needs of individuals and businesses. During the past five years, it has strengthened the economy, enhanced programs provided by the State's educational system, and increased opportunities for the work force. On average, the program has served about 3,500 firms per year, the vast majority of which had 100 or fewer employees. Approximately one-half of the programs served manufacturing firms, a vital sector of the State's economy. As a consequence, many of the State's firms have become or regained their status as "world class" companies because of the improved product quality or increased worker productivity achieved through the training program. In addition, 2,500 entrepreneurs improved their business planning and management skills.

Postsecondary agencies -- usually but not always community colleges -- have been the major providers of Employer Specific Skills Training (see Table 17). Approximately one-half the total training awards have gone to these institutions. It is difficult to make assumptions about trends because the program has been funded at about the same level for the five years. The demand for programs has consistently exceeded the availability of funds.

Almost all of these projects have been at two-year colleges because Section 3032 of Education Law limits the eligibility of four-year colleges and universities. Future efforts will be directed at attempting to expand the institutions that are eligible to receive grants to include four-year colleges and universities. This would open up a broad array of specialized educational programs and services that are not currently accessible to workers and businesses.

Adult Literacy.

There is an urgent need in the work place for people with higher level literacy and thinking skills. In addition, the number of immigrants in New York State is increasing rapidly. Literacy programs are designed to assist adults to develop

TABLE 17
POSTSECONDARY PARTICIPATION
IN EMPLOYER SPECIFIC SKILLS TRAINING PROGRAMS 1985 - 1989

Program Year	Number of Trainees	Number of Projects	Total Award
1985-86	24,703	249	$4,969,000
1988-89	26,400	266	$5,132,000

Source: NYSED, Office of Postsecondary Education Policy Analysis.

skills in reading, writing, listening, and speaking English so they may become as productive as possible within their homes, work, and communities. Eligible programs are operated by Federal, State, and local agencies; community-based organizations; colleges; and libraries. Classes and opportunities for tutoring are available to persons who are at least 16 years old and out of school.

The role of colleges and universities in literacy education has increased considerably since 1983. At that time, five colleges had federal Adult Education Act grants to deliver literacy services. In 1990, there are 17 colleges involved; 14 are in New York City (82 percent); 15 are community colleges. Figure 37 shows the dramatic increase in enrollments between 1983-84 and 1988-89. Higher education institutions will continue to play a major role in providing literacy services. Their role could be expanded to serve as comprehensive centers, providing multiple education and training opportunities and appropriate support services. Lack of space in literacy classes at many institutions is hampering the further expansion of services to this adult population.

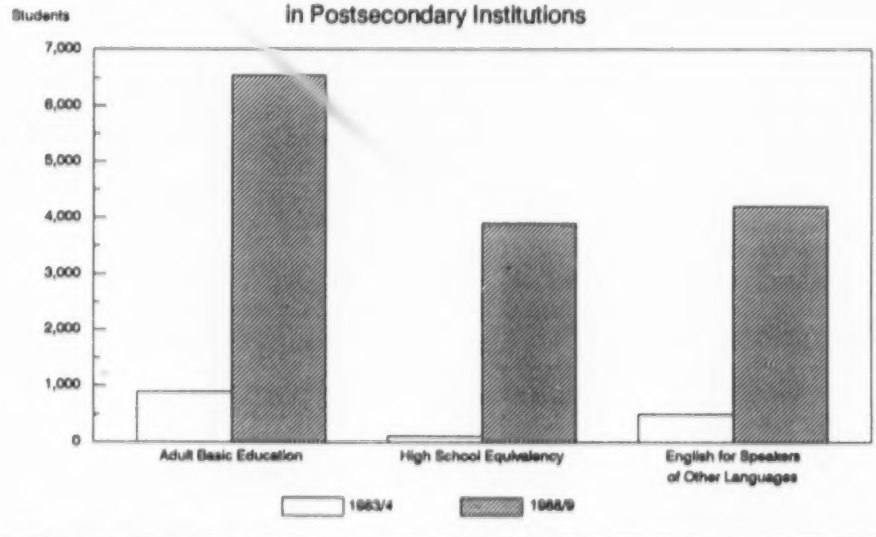
Immigration.

Under the Immigration Reform Control Act of 1986, the Department funds the education of Eligible Legalized Aliens seeking permanent resident status. Of the 80 institutions funded to provide educational services leading to a Certificate of Satisfactory Pursuit, 14 are postsecondary institutions. Ten of these are part of the City University system and three are independent colleges on Long Island. Data collected between the beginning of the program in 1988 and the current year show that 8,543 students have been served and 5,763 Certificates of Satisfactory Pursuit have been awarded. The program is scheduled to continue into 1993 with colleges remaining the major providers.

Occupational Shortages.

In addition to general work force preparation, colleges and universities also will have to respond to occupational shortages as they develop over the next decade. As the 1990's begin, teaching and health care are two of the critical occupations that will require attention and intervention by

Figure 37
NYS Adult Literacy Enrollment
in Postsecondary Institutions



colleges and universities.

Teaching.

A stable, qualified teaching force is one of the most important ways to ensure the economic and social welfare of the State and its people. New York's colleges and universities produce enough teachers to prevent any systematic shortages that could result in lower standards and qualifications of the State's future teaching force. In 1988-89, there were 718 operating school districts in New York employing some 170,000 classroom teachers. The Department projects this total to grow to about 179,360 in 1993-94. In New York City, the total number of teachers is expected to increase by 2,880 while the remainder of the State shows an anticipated increase of almost 6,580. Based on student enrollment, vacancies for the five years are estimated to be 35,300 in New York City and almost 50,000 for the balance of the State. Annually, these cumulative figures translate into about 7,000 vacancies for the City and approximately 10,000 for the rest of the State. Of the anticipated vacancies only about 28 percent will be filled by new teachers, the remaining 72 percent will be by filled by experienced teachers not currently employed full time in the public schools. This means that, on average, New York will need approximately 4,800 new teachers annually, 2,100 in New York City and 2,700 in the rest of the State.

Institutions offering teacher preparation currently graduate about 8,800 per year from those programs -- about 1,800 from institutions in New York City and about 7,000 from those in the rest of the State. This total appears roughly adequate, but certainly not excessive. Because many graduates do not apply for teaching jobs, it is difficult to estimate shortages or surpluses, but based on past rates of applications for certification, no major shortages are expected outside of New York City. In the City, over 60 percent of the new hires have had no formal preparation. These numbers are aggregates and do not reflect shortages in various disciplines. Currently, in the State there are shortages of teachers of foreign languages, of English to speakers of foreign languages, of special education, and of most occupational education fields, as well as shortages of school psychologists and school media specialists. Serious shortages are starting to appear across the State, including New York City, in occupational education and in special education. New York City also has current and expected shortages in elementary education, bilingual education, social studies, English, and mathematics.

A related serious problem is the shortage of minority teachers. In New York State, minority children are approximately 38 percent of the students but minorities constitute only 12 percent of the teachers. The disparity is even greater in New York City, where 80 percent of the students are minority but only 28 percent of the teachers are. Current minority enrollment rates in teacher preparation institutions as well as enrollment rates in liberal arts programs indicate that the disparities will not be improving at least through the mid-1990's. The recruitment and preparation of qualified minority teachers, therefore, will need to be a major priority for teacher preparation institutions.

Health Care

Health care is one of the largest and fastest growing sectors of both the nation's and the State's labor force. There are currently about 715,000 individuals employed in the State's health care delivery system, nine percent of the State's entire work force. The New York State Health Department projects that as many as 230,000 additional health care jobs may be created by the year 2000 in such professions as nursing, physical therapy, and occupational therapy, and for home health aides and orderlies. Growth in the State's health care system reflects a number of changes within the society, including a substantial growth in the elderly population of the State.

Growth in the demand for health care services has not been met by growth in the preparation of health care workers to meet that demand. The Department of Health's 1989 Final Report of the New York State Labor-Health Industry Task Force on Health Personnel identified significant long-term demand for increased numbers of registered nurses and licensed practical nurses; nurses' aides, orderlies, and home health care

workers; physical therapists; occupational therapists; respiratory therapists; speech-language pathologists and audiologists; physician's assistants; pharmacists; radiologic and radiotherapy technologists; clinical laboratory technicians; midwives; and public health personnel.

Colleges and universities are aware of these conditions and have responded to the health care industry by introducing new programs in these fields. Since July 1, 1988, the Regents have approved master plan amendments for seven public and four independent institutions to authorize them to offer programs in five health care fields. These included A.A.S. and M.S. programs in nursing, four A.A.S. programs in physical therapy assistant, two B.S. program in physician's assistant, three master's degree programs in public health-related fields, and an A.A.S. program in respiratory therapy.

CHAPTER V

MAKING THE MOST EFFECTIVE USE OF RESOURCES

The 1988 Plan said that "State policy governing public funding for postsecondary education should ensure that institutional excellence is preserved and expanded, access and options of choice for students are maintained, and the diversity that is characteristic of New York's higher education system is supported." It set forth the Regents commitment "to seeking public support for higher education sufficient to maintain and enhance access for all New Yorkers and excellence in all the endeavors of our colleges and universities while assisting the institutions and sectors to demonstrate their accountability for the expenditure of those funds."

This chapter seeks to assess the progress that has been made with respect to making the most effective use of resources. It is divided into three major sections:

- **(1) accountability for students' education,**
- **(2) faculty, and**
- **(3) facilities and equipment needs.**

It is fitting that we begin to examine progress by reviewing accountability for students' education.

Accountability for Students' Education

In the 1988 Statewide Plan the Regents reaffirmed their commitment to the 1984 Plan's goal of Excellence: "To promote and maintain high quality in all endeavors of each institution, whatever its mission, and institutional autonomy within the postsecondary system as a whole." Promoting quality in higher education and assuring that colleges and universities adhere to academic standards are an important part of the Education Department's mission. In fact, the Regents are the only state higher education board in the nation that is recognized by the U.S. Secretary of Education as a Nationally Recognized Accrediting Agency. In the fall of 1989, the 244 public, independent, and proprietary colleges and universities in The University of the State of New York offered over 16,000 programs of study registered as meeting the standards published in the Regulations of the Commissioner of Education.

New Programs of Study.

From July 1, 1988, to May 25, 1990, the Department registered 601 new programs of study being introduced by public, independent, and proprietary colleges and universities. Over this period, the Department discontinued registration for almost 250 programs being terminated at New York colleges. The net increase of about 354 programs reflects in part the evolution of instruction at our colleges and universities over the past two years. Table 18, below, displays the distribution of new programs by major discipline division and level of award.

On-Going Program Review.

Every degree-granting institution in New York State is visited periodically to evaluate its degree and credit-bearing certificate programs against the registration standards in the Commissioner's Regulations. These reviews are conducted by Department staff and faculty and administrators from other colleges and universities. The goal of the process of program review is to make sure that every program meets New York's published standards, not to terminate programs. If deficiencies are found, the institution must submit, for the Department's approval, a plan to remedy them.

During 1988-89 and 1989-90, the Department

TABLE 18

NEW PROGRAMS REGISTERED
By Discipline Division and Level of Award New York State, 1988-89 and 1989-90 [to 5/25/90]

Discipline Division	Certificate	Associate Degree	Baccalaureate Degree	First Professional	Master's Degree	Advanced Certificate	Master of Philosophy	Doctoral Degree	All Levels
Agriculture and Natural Resources	--	--	1	0	0	0	0	0	1
Architecture and Environmental Design	--	--	0	0	2	0	0	0	2
Area Studies	--	--	6	0	2	0	0	1	9
Biological Sciences	--	--	17	0	8	1	1	17	44
Business and Management	--	--	15	0	4	2	1	2	24
Communications	--	--	3	0	2	0	0	0	5
Computer and Information Sciences	--	--	13	0	5	2	0	0	20
Education	--	--	2	0	13	7	0	0	22
Engineering	--	--	13	0	2	0	0	0	15
Fine and Applied Arts	--	--	10	0	14	7	0	1	32
Foreign Languages	--	--	11	0	1	0	0	0	12
Health Professions	--	--	16	0	14	6	0	1	37
Home Economics	--	--	1	0	0	0	0	0	1
Law	--	--	0	16	0	0	0	0	16
Letters	--	--	12	0	3	0	0	0	15
Library Science	--	--	0	0	0	4	0	0	4
Mathematics	--	--	5	0	5	0	0	0	10
Physical Sciences	--	--	20	0	6	0	0	0	26
Psychology	--	--	2	0	3	0	0	0	5
Public Affairs and Services	--	--	10	0	1	5	0	0	16
Social Sciences	--	--	22	0	3	5	0	0	30
Theology	--	--	0	0	0	1	0	1	2
Interdisciplinary Studies	--	--	10	0	2	2	0	1	15
Business and Commerce Technologies	57	72	--	--	--	--	--	--	129
Data Processing Technologies	13	7	--	--	--	--	--	--	20
Health Services and Paramedical Technologies	3	10	--	--	--	--	--	--	13
Mechanical and Engineering Technologies	12	13	--	--	--	--	--	--	25
Natural Science Technologies	3	8	--	--	--	--	--	--	11
Public Service Related Technologies	11	6	--	--	--	--	--	--	17
Prebaccalaureate Liberal Arts and Sciences	5	18	--	--	--	--	--	--	23
All Disciplines	104	134	189	16	90	42	2	24	601

Source: NYSED, Office of Postsecondary Education Policy Analysis.
Bureau of Academic Information and Reports, Inventory of Registered Programs.

carried out a statewide review of baccalaureate programs leading to teacher certification, visiting 62 campuses. As a result of that review, the Department is encouraging colleges to involve liberal arts and sciences faculty more fully in the preparation of teachers, to ensure that teacher candidates undertake a curriculum of breadth and depth that includes course work in mathematics and the laboratory sciences, and to increase the numbers of minority-group faculty and students in education. Ninety colleges recently submitted plans to bring their teacher preparation programs into compliance with the newly strengthened teacher certification provisions in the Commissioner's Regulations. The Department will review the plans, and intends to sponsor a conference in early 1991 that will highlight the most forward-looking among them.

During 1989-90, the Department also made site visits to 89 programs in the professions, with 84 additional registration actions taken during that academic year. The reviews focused on programs leading to entry to the professions of physician's assistant, occupational therapy assistant, physical therapy assistant, and massage. The Department reviewed about half of all physician's assistant programs, 80 percent of occupational therapy assistant programs, 60 percent of physical therapy assistant programs, and all of the massage programs. The remaining programs in each of these professions will be visited in 1990-91. As a result of the reviews, the Department is exploring questions of appropriate prerequisite education for entry into professional study and the level and content of curricula in one profession, reconsidering the academic requirements for licensure in another, and exploring the need for either legislative action or regulatory change concerning licensure issues in two professions.

Site visits were made to 15 nursing programs in 1988-89, and 41 in 1989-90. Four new nursing programs were registered in 1988-89, and six in 1989-90. Five LPN programs and one RN diploma program closed. One RN diploma program received Regents authorization to award associate degrees. Of the nine currently-registered diploma programs, four are preparing requests to grant associate degrees.

The nursing shortage, coupled with a trend of declining success rates on the RN licensing examination, provided the impetus for a special review of 25 institutions with programs leading to RN licensure at which more than one-third of the graduates of the nursing programs had failed the examination. In 1989-90, Department staff or consultants visited 21 of them to focus on possible deficiencies and to analyze their progress in implementing improvement plans. The other four had acceptable plans and were encouraged to proceed with implementation and to report progress to the Department. One of the 21 has stated its intention to cease operation in June 1991.

In the fall of 1990, the Department sponsored a statewide conference of institutions offering RN programs to focus on the problems identified and to explore strategies to address them and to improve nursing education in New York State

At the doctoral level, the Department concluded its statewide reviews of biological sciences programs (189 programs) and of psychology (100 programs). It began its statewide review of programs in engineering (115 programs at 13 institutions) and computer science (16 programs at 13 institutions).

Assessment Programs for Undergraduate Education.

Since 1972, the Commissioner's Regulations have required every New York college and university to have reviewing systems to estimate student and faculty success in achieving the goals and objectives of the institution's programs of study. The self-study guides used in the evaluation of existing programs against the registration standards include sections addressing performance in the assessment of student achievement. The Department makes an evaluation visit to every institution, on average, every five to seven years. Following a visit, a report to the institution is prepared, which includes an evaluation of the institution's performance in assessing student performance.

In New York, 217 colleges and universities offer undergraduate study; 194 responded to the Bulletin's questions about assessment of undergraduate study. Almost 3 out of 4 reporting institutions that offer undergraduate study (141 out of 194--72.7 percent) have formal programs to assess undergraduate education, including 48 out of 59 State University campuses (81.4 percent), 11 out of 18 City University colleges (61.1 percent), 63 out of 98 independent colleges and universities (64.3 percent), and all 19 responding proprietary colleges. Nationwide, however, 82 percent of institutions are engaged in assessment activity, according to the American Council on Education's July 1990 Campus Trends report.

Statewide, institutions most frequently used graduation rates (used by 79.0 percent) and job placement (by 74.1 percent) to assess their undergraduate programs. Almost half (48.3 percent) also used standardized test scores. Less frequently used as criteria were placement of graduates in higher levels of study. There are similar patterns in each sector, except that a majority of reporting SUNY campuses and half the independent institutions with assessment systems (55.1 percent and 50.0 percent, respectively) also used standardized test scores.

Almost 3 out of 4 assessment systems focus on assessing majors (72.5 percent); 69.0 percent also focus on basic skills assessment, 56.3 percent on general education, 44.4 percent on social or personal growth, and 19.7 percent on other factors. Each sector had similar patterns. In comparison, according to the 1989 Campus Trends, only 26 percent of assessment systems nationwide focused on majors; 65 percent focused on basic skills.

Academic Quality Assurance in Noncredit Education.

Noncredit courses are offered by 156 out of 216 colleges and universities responding to this question (72.2 percent) (see the discussion of Service Through Noncredit Education, in Chapter III, above). Of that number, 148 (94.9 percent) reported on the methods they use to assure the quality of their noncredit course offerings. Almost all use review by administrative officers of the college responsible for noncredit offerings (145 or 98.0 percent). Over 90 percent also use student evaluation (135 or 91.2 percent). Fewer than half use other measures: review by employees and professional organizations, 40.5 percent (60); peer faculty review by an academic oversight committee, 37.8 percent (56); review by professional reviewers and consultants, 23.6 percent (35); and other measures, 20.3 percent (30). This pattern also was seen in each sector, except that in both SUNY and CUNY at least half the campuses use review by employee and professional organizations.

Foreign Language Requirements.

The 1988 Plan urged colleges and universities "to demonstrate the importance they attach to the study of languages other than English through their admission policies and their requirements for degrees."

Undergraduate Education.

Today, the number of colleges and universities requiring prior study of or demonstrated competence in a foreign language for admission to some or all undergraduate programs is only 60 percent of the number five years ago. The 1984 Statewide Plan found that 45 of 212 institutions offering undergraduate study had such an admission requirement [1984 Plan, Volume II, page 41]. In that Plan, the Regents called on colleges and universities "to consider requiring study of a language in addition to English for admission, by 1990." Of 217 institutions offering undergraduate study in 1989-90, 188 responded to this question in the Bulletin of this Progress Report. Only 19 -- all independent institutions -- require a foreign language for admission to all programs. Eight more (seven independent institutions and one City University college) require it for admission to some programs. Table 19, below, shows the differences by sector.

This reduction took place at the same time as the phase-in of Regents Action Plan requirements for elementary and secondary schools that will assure that, by the early 1990's, all New York high school graduates will have had some study of a

TABLE 19
NUMBER OF INSTITUTIONS REQUIRING A FOREIGN LANGUAGE FOR UNDERGRADUATE ADMISSION BY SECTOR
1984-85 and 1989-90

	1984-85	1989-90
State University of New York:	4	0
The City University of New York:	1	1
Independent Colleges and		
Universities:	40	26
Proprietary Colleges:	0	0
TOTAL:	45	27

Source: NYSED, Office of Postsecondary Education Policy Analysis.

foreign language and Regents diploma recipients will have had five years of it -- two by grade 9 and three more by grade 12.

Six institutions offering associate degrees require foreign language study or competence for conferral of all associate degrees; 11 more require it in some associate degree programs. One institution requires foreign language study of certain associate degree students regardless of program.

Statewide, 130 institutions offer baccalaureate degrees. At the baccalaureate level, a majority of the 130 responding institutions (52.3 percent) require foreign language study or competence for a degree in some or all programs; however, that is a reduction from the 59 percent reporting such a requirement in the 1986 Progress Report. Only 24 require it for all baccalaureate degrees. Table 20, below, shows the data. In comparison, the 1990 Campus Trends reported that only 44 percent of all colleges and universities in the nation required a foreign language for completion of an undergraduate major by some or all students.

Graduate Education.

Statewide, 123 colleges and universities offer graduate-level study; 103 of them responded to this question. Only one requires foreign language study or competence for admission to all programs. A further 27 have a foreign language requirement for admission to some graduate-level programs. The other 75 do not require it at all. Table 21, below, displays the data by sector:

Of 99 responding institutions offering graduate study, almost 2 out of 3 (63--63.7 percent) did not require foreign language study or competency for a master's degree in any program. City University displayed a different pattern from that common to both State University and independent institutions. At CUNY, two out of three colleges that offer graduate study do require foreign language study for master's degrees in some programs. Statewide only two institutions -- one SUNY campus and one independent institution -- require a foreign language for conferral of all master's degrees.

Statewide, 47 institutions confer doctoral degrees; 38 of them award Ph.D. degrees. At the doctoral level, of 36 responding institutions, 17 (47.2 percent) require a foreign language for a Ph.D. in some programs, and 16 (44.5 percent) do

TABLE 20
NUMBER OF INSTITUTIONS REQUIRING FOREIGN LANGUAGE STUDY OR COMPETENCE FOR A BACCALAUREATE DEGREE BY SECTOR

	In All Programs	In Some Programs	Not at All
State University of New York:	2	13	23
The City University of New York:	5	3	5
Independent Colleges and Universities:	17	28	31
Proprietary Colleges:	0	0	3
TOTAL:	24	44	62

Source: NYSED, Office of Postsecondary Education Policy Analysis.

TABLE 21
NUMBER OF INSTITUTIONS REQUIRING FOREIGN LANGUAGE STUDY OR COMPETENCE FOR ADMISSION TO GRADUATE STUDY BY SECTOR

	In All Programs	In Some Programs	Not at All
State University of New York:	0	9	19
The City University of New York:	0	4	6
Independent Colleges and Universities:	1	14	49
Proprietary Colleges:	0	0	1
TOTAL:	1	27	75

Source: NYSED, Office of Postsecondary Education Policy Analysis.

not require it for any Ph.D. degree. Only three independent institutions (8.3 percent) require a foreign language for all Ph.D. degrees. At SUNY, a foreign language is required for a Ph.D. in some programs at 9 of its 13 Ph.D.-granting campuses (69.2 percent) but not at all at the other 4. CUNY requires it in some fields, but not all. A majority of the 22 responding independent institutions (12--54.6 percent) do not require a foreign language for any Ph.D. degree.

For doctorates other than the Ph.D., 2 out of 3 responding institutions (14 of 21) do not require a foreign language in any program. The other third (seven institutions) require it in some fields. The patterns at SUNY and in the independent sector are similar.

For a first-professional degree (e.g., M.D., J.D., M.Div.), almost 80 percent of the 33 responding institutions (26 or 78.8 percent) do not

require a foreign language but 5 institutions require it in all such programs (15.1 percent); at 2 (6.1 percent) -- both independent -- a foreign language is required for a first-professional degree in some fields but not in others. There are similar patterns in each sector.

Faculty

Representation of Minorities and Women on Faculties.

Recognizing that faculty serve as role models for students, the 1988 Plan called on colleges and universities to make greater efforts "to increase the representation of women and underrepresented minorities on their faculties. . . ."

Forty-eight percent of institutions made considerable efforts to increase the recruitment of faculty who are Black, Hispanic, or Native American; a further 45 percent expended some effort; 7 percent reported no effort. This is somewhat more than is seen nationwide. Campus Trends reported that 31 percent of institutions reported devoting "a lot of effort" to recruiting minority faculty members, and a further 48 percent, "some" effort. Forty-one percent of New York's institutions made considerable efforts to increase the recruitment of Black, Hispanic, or Native American administrative staff, and 49 percent more said that they expended some effort. Nine percent said that they expended no effort. Again, this is much more than is reported nationwide. Campus Trends found only 14 percent of institutions reporting "a lot of effort" to recruit senior administrators who are minorities, and a further 39 percent, "some" effort; 47 percent reported no such activity.

Unfortunately, the result of all these efforts was a barely noticeable increase in the proportion of faculty who are minority group members. Between 1981-82 and 1987-88 (the most recent year available) the proportion of faculty who were Black increased from 4.1 percent to only 4.5 percent; the proportion who were Hispanic increased from 2.0 percent to 2.3 percent.

Women also traditionally have been underrepresented among higher education faculty. In 1980 only 28 percent of full-time faculty were women and only 30 percent of all faculty (full and part-time) were women. However, women made considerable progress during the decade, with the total number of female faculty increasing by 26 percent between 1980 and 1988; from 25,608 to 32,194. Additionally, while the total number of full-time faculty increased by only 5 percent between 1980 and 1988, the number of full-time female faculty increased by 16 percent.

Figures 38 and 39 and Table 22, below, show faculty by rank and by gender in 1980 and 1987. The figures show that while progress has been made in promoting female faculty, overall they are still concentrated at the lower faculty ranks. Between 1980 and 1987 the number of female full professors increased by 31 percent while the number of male full professors increased by only 7 percent. At the associate professor level, the number of women faculty increased by 21 percent while the number of male faculty at that rank actually decreased by 9 percent. Despite this progress, however, only 16 percent of full professors in 1987 were female, up from 13 percent in 1980. Conversely 50 percent or more of the instructors were women in both years. The share of assistant professors who were women rose from 36 percent in 1980 to 41 percent in 1987. Table 22 shows that the salary disparity between male and female faculty members at all ranks has not changed appreciably since 1980.

The fact that both male and female faculty at the instructor level declined substantially during this period undoubtedly reflects the aging of New York State's faculty and the lack of recruitment of new, younger faculty members.

Large proportions of institutions rated the following obstacles to minority faculty hiring to be important or very important: insufficient number of qualified candidates (91 percent), candidates do not match available positions (78 percent), and competition with industry for candidates (71 percent). There was no similar consensus on important or very important obstacles to the hiring of female faculty. About half of the institutions

Figure 38
Change in Rank of Male and Female Faculty Members
1980-1987

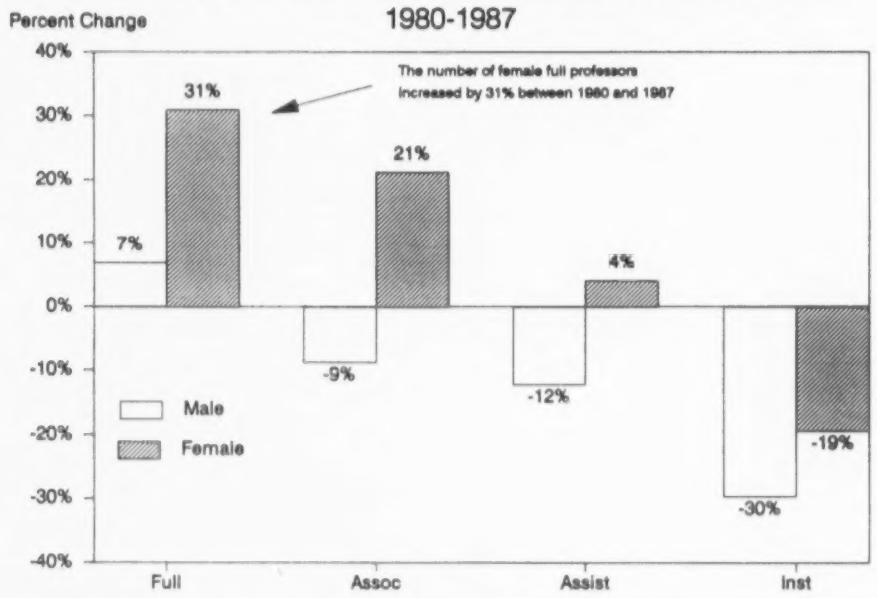
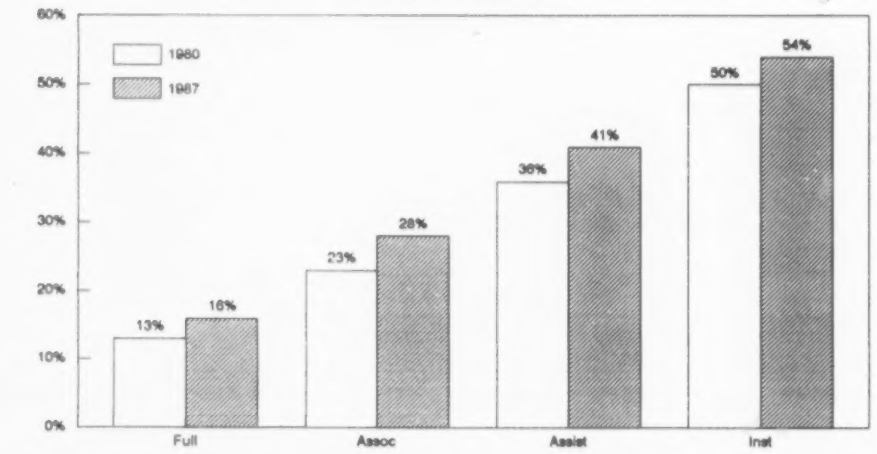


Figure 39
Percent Female Within Each Faculty Rank
1980 and 1987



Source: NYSED, Office of Postsecondary Education Policy Analysis

TABLE 22
MALE AND FEMALE FACULTY BY RANK IN 1980 AND 1987/fs

Rank	Average Salary	
	Male Faculty	Female Faculty
	1980	
Full Professor	$32,276	$29,544
Associate Professor	$24,674	$23,957
Assistant Professor	$19,659	$19,049
Instructor	$15,667	$14,741
Overall Avg. Salary	$25,763	$21,416
	1987	
Full Professor	$52,341	$48,235
Associate Professor	$39,556	$37,549
Assistant Professor	$32,221	$29,849
Instructor	$24,957	$23,730
Overall Avg. Salary	$42,637	$35,048

Source: NYSED, Office of Postsecondary Education Policy Analysis. Higher Education Data System.

thought each of the following obstacles was important or very important, and about half thought they were only marginally important or not important at all: insufficient number of qualified candidates, candidates not matching available positions, tenured faculty in place, candidates not willing to relocate, faculty salaries are too low, competition with industry for candidates.

The most common inducements for minority and female faculty were enriched salaries/compensation -- 34 percent of institutions reported using this inducement to attract minority faculty and 20 percent to attract female faculty; and aid to complete a doctoral degree -- 27 percent reported using it to attract minority faculty and 28 percent, female faculty.

As the Regents pointed out in the 1988 Plan, there can be no dramatic increase in representation of minorities on college and university faculties until the number of minorities earning doctoral degrees increases dramatically. According to the National Center for Education Statistics, of the 32,000 doctorates awarded in 1987 less than 2,000 went to Black and Hispanic students. In 1977 Blacks received 3.8 percent of all doctoral degrees; by 1987 that percentage had declined slightly to 3.5 percent. Hispanics received 1.6 percent of all doctorates in 1977 and 2 percent in 1987.

The situation in New York State largely mirrors national trends. In 1977-78 Blacks received 3.7 percent of the doctoral degrees awarded in New York State, and 2.7 percent in 1986-87 (the most recent year for which data from all sectors are available). The situation also was unchanged for Hispanics, who received 3.0 percent of the doctorates in 1978 and 2.6 percent in 1987. The situation for other minorities, however, including American Indians, Alaskan Natives, and Asians was markedly different. They received 3.1 percent of the doctorates in 1978 and 5.2 percent in 1987. The number of doctorates received by women also has been increasing in recent years in both absolute numbers and as a share of all doctoral degrees. The overall share of doctorates earned by women increased in New York from 32.1 percent in 1978 to 38.1 percent in 1987. In absolute numbers, that represented a 17 percent increase in the number of doctorates earned by women during that period.

As the institutions themselves are quick to point out, efforts to recruit, within a single nationwide market, faculty members who are minority group members merely result in institutions raiding each other's faculties for the same persons. This is borne out by the report in Campus Trends, 1989 that, nationwide, only one institution in four reported a net gain in minority faculty members from 1987-88 to 1988-89.

The market for faculty is a nationwide one. Therefore, improvement in the number of faculty members who are members of minority groups depends on a nationwide improvement in the number of doctorates earned by Blacks, Hispanics and Native Americans. New York must do its share to contribute to that effort, but New York cannot, by itself, solve this problem.

The Regents have proposed to the Legislature bills to address the problem. They would encourage Black, Hispanic, and Native American men and women, and women of all racial/ethnic groups, to undertake faculty careers by providing fellowships, paying off student loans, and assisting untenured faculty members to achieve tenure. The bills have not been enacted.

Student-Faculty Ratios.

Between 1980-81 and 1988-89, student-faculty ratios declined. Statewide, the ratio of all full-time equivalent students to all full-time equivalent instructional faculty declined by 7.2 percent, from 13.8:1 in 1980-81 to 12.8:1 in 1988-89. Academically, such a change generally is seen as desirable, but it is an element in the increased cost of operation of higher education institutions. Similar patterns were seen in State University and the independent and proprietary sector. At City University, however, the ratio of students to faculty remained level. Table 23, below, displays the ratios for each year by sector and institutional type.

The data in Table 23 are based on institution-wide ratios of students to faculty. The questionnaire asked institutions to characterize the changes in student-faculty ratios within their institutions between 1985-86 and 1988-89. Statewide, of 194 responding institutions that offer undergraduate study, almost half (95 or 49.0 percent) said that there was no overall campus-wide trend; ratios in undergraduate programs decreased, increased, or remained the same depending on the program. A further 26 (13.4 percent) said that ratios remained unchanged across all programs. Similar responses came from State University, independent, and proprietary respondents; at City University, however, the ratios decreased in some programs while remaining the same in all others at all but one of the undergraduate colleges.

At the graduate level, the same statewide pattern pertained. Of 105 responding institutions offering graduate study, 47 (44.8 percent) reported that there was no single campus-wide pattern; the ratios of graduate students to faculty had decreased, increased, or remained the same depending on the program. At a further 17 (16.2 percent), graduate student-faculty ratios remained unchanged in all programs. SUNY and independent institutions reported similar patterns; at CUNY, however, the ratios decreased in some graduate programs while remaining the same in others at seven of the ten colleges offering graduate study.

TABLE 23

**TRENDS IN STUDENT-FACULTY RATIO*
BY INSTITUTIONAL CLASSIFICATION
NEW YORK STATE 1980-81 THROUGH 1988-89**

Institutional Classification	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89
TOTAL STATE	13.8	13.9	13.9	13.8	13.2	12.9	13.0	12.8	12.8
TOTAL SUNY	16.4	16.4	16.6	16.5	15.9	15.7	15.4	15.5	15.6
University centers	15.6	15.4	15.9	15.7	15.4	15.1	15.2	15.2	15.3
University colleges	16.8	16.9	17.2	17.3	17.0	16.8	16.8	17.1	17.7
Health sciences centers	2.1	2.2	3.0	3.2	3.3	3.2	3.2	3.4	3.4
Specialized colleges	12.4	14.8	13.7	13.4	12.0	11.4	11.2	11.0	11.2
Statutory colleges	19.1	17.7	18.0	20.2	19.5	19.9	19.4	19.3	19.4
Agricultural-technical	20.5	21.2	19.7	19.2	18.2	17.9	17.7	17.7	18.1
Community colleges	18.5	18.2	17.5	17.2	16.3	16.1	15.6	15.5	15.4
TOTAL CUNY	14.3	14.5	14.4	14.4	13.8	13.2	14.2	13.9	14.3
Graduate centers and Senior colleges	13.9	13.8	13.9	13.8	13.2	12.2	13.2	13.5	13.8
Community colleges	15.4	16.5	16.0	16.0	15.3	15.9	16.6	15.0	15.7
TOTAL INDEPENDENT	11.7	11.9	11.7	11.5	11.1	10.9	10.8	10.5	10.5
Multiversities	9.2	9.6	9.9	9.3	9.4	9.2	9.3	9.2	8.8
Universities	13.8	13.6	13.6	14.7	13.9	13.0	13.2	13.4	13.1
College complexes	14.7	14.1	13.1	12.7	11.8	12.0	11.8	11.5	11.9
Colleges	14.6	14.2	14.1	13.9	13.3	13.2	13.1	12.3	12.9
Specialized colleges	10.6	10.0	9.7	9.3	9.0	8.8	9.2	9.6	8.5
Health sciences centers	2.4	2.9	3.0	2.7	2.4	2.4	2.3	2.1	2.0
Engineering-technical	13.4	14.6	13.3	14.1	13.5	13.7	12.7	12.2	11.9
Seminaries	6.4	6.2	6.2	7.4	6.3	6.4	6.6	6.7	8.4
Nursing two-year	7.7	7.7	7.4	7.7	7.3	6.9	6.1	6.1	7.4
Other two-year	14.1	13.6	13.1	13.8	12.8	12.4	12.3	11.3	12.5
TOTAL PROPRIETARY	20.3	21.5	20.6	22.0	21.6	21.7	19.9	19.7	19.4

**Full-time equivalent students divided by full-time equivalent faculty in the function of instruction*
Source: NYSED, Office of Postsecondary Education Policy Analysis
Higher Education Data System

These reports generally are consistent with the data in Table 23. Between 1985-86 and 1988-89, statewide, student-faculty ratios were virtually unchanged, dropping from 12.9:1 only to 12.8:1. At State University they rose slightly, from 15.1:1 to 15.3:1. At City University, the ratio of students to faculty did increase significantly, from 13.2:1 to 14.3:1. (This increase was at the senior colleges.) The independent sector saw a decline from 10.9:1 in 1985-86 to 10.5:1. At proprietary colleges, the student-faculty ratio declined from 21.7:1 in 1985-86 to 19.4:1 in 1988-89.

Numbers of faculty.

The statewide decrease in the ratio of students to faculty resulted from a 7.1 percent growth in the number of full-time equivalent faculty, statewide, between 1980-81 and 1988-89, from

54,449 to 58,330, while the number of full-time equivalent students remained virtually flat, dropping from 750,230 to 747,973. In turn, that increase was caused largely by a 13.8 percent growth in part-time faculty members, from 30,114 in 1980-81 to 34,283 in 1988-89; the number of full-time faculty grew by only 4.6 percent, from 39,392 to 41,188 (see Table 24, below). In 1980-81, 56.7 percent of all faculty were full-time; by 1988-89, that share had declined to 54.6 percent. Similar patterns were seen at SUNY and CUNY community colleges. SUNY State-operated campuses saw a 9.6 percent reduction in full-time faculty and a 54.0 percent increase in part-time faculty. City University senior colleges had an 8.4 percent decline in the number of full-time faculty, and a 10.0 percent increase in part-time faculty. The independent sector, on the other hand, had a 14.3 percent increase in full-time faculty and only a 2.7 percent increase in part-time faculty. In the proprietary sector, full-time faculty grew by 14.0 percent, from 480 to 547, while part-time faculty grew by 14.8 percent, from 939 to 1,078.

Average Class Sizes.

At a majority of 195 responding institutions offering undergraduate study (101, or 51.8 percent), change in average undergraduate class size depended on the program between 1985-86 and 1988-89. At 25 (12.8 percent), it decreased in some programs while remaining unchanged in others, but did not increase in any programs. At the graduate level, of 101 responding institutions offering graduate study 46 (45.5 percent) said that change in average graduate class size depended on the program between 1985-86 and 1988-89. At 14 (13.9 percent), it remained unchanged in all graduate programs.

Course Preparations.

Statewide, there was no change in the average number of undergraduate courses (not sections) to be prepared by a faculty member between 1985-86 and 1988-89 at half of the 194 responding institutions offering undergraduate study. At 52 (26.8 percent) there was no overall campus-wide pattern. Each sector had similar findings. At the graduate level, the average number of graduate course preparations per faculty member remained unchanged at a majority of institutions between 1985-86 and 1988-89 (52 of 100, or 52.0 percent). At 23 (23.0 percent) there was no overall campus-wide pattern; the change depended on the program. As with undergraduate course preparations, there were similar patterns in every sector.

Trends in the Age of Faculty Members.

Considerable attention has been devoted, nationally, to the aging of the faculty members within the nation's higher education institutions. Not only will federal law no longer permit mandatory retirement of tenured faculty members after 1993, but the authority in New York's Executive Law to require retirement of faculty at State University and City University at age 70 was repealed by Chapter 483 of the Laws of 1990. Patterns of aging similar to those of the nation appear to be occurring in New York's higher education system, as Figures 40 and 41 show. Figure 40 shows a shift upward in the age distribution of the faculty, with a decrease in the percentage of younger faculty members and an increase in the percentage of older faculty members. Figure 41 shows the percentage of faculty members over age 60 in 1980 and 1988 by sector. With the exception of the proprietary sector the percentage of older faculty members has increased substantially in each sector.

Future Faculty Needs and Supply

Both in New York and in the nation, the average age of higher education faculty has been increasing in recent years. We have also seen that New York's colleges and universities have been turning increasingly to part-time faculty. At about the time that many of New York's faculty begin to reach retirement age, enrollments are projected to begin expanding again. Since it takes, on average, seven to ten years for someone to begin a faculty career (achieve the doctorate), the issue of an inadequate future supply begins to represent a significant problem for the well being of New York's higher education system. As a recent report of the Association of American Universities said:

TABLE 24

TRENDS IN FULL-TIME AND PART-TIME INSTRUCTIONAL FACULTY BY SECTOR NEW YORK STATE 1980-81 THROUGH 1988-89

Institutional Classification	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	8-Year % Change
TOTAL STATE										
Full-time	39,392	40,264	40,078	39,884	40,039	40,462	40,601	41,104	41,188	4.6%
Part-time	30,114	28,826	29,222	31,724	33,778	34,616	33,120	33,520	34,283	13.8
SUNY										
State-Operated										
Full-time	9,667	9,681	9,021	8,712	8,734	8,616	8,695	8,693	8,736	-9.6
Part-time	2,493	2,301	2,649	3,119	3,309	3,677	3,700	3,770	3,838	54.0
Community Colleges										
Full-time	4,076	4,289	4,412	4,447	4,462	4,415	4,361	4,399	4,407	8.1
Part-time	4,573	4,876	5,247	5,677	5,444	5,136	5,409	5,593	6,127	34.0
CUNY										
Senior Colleges and Graduate Centers										
Full-time	4,979	4,937	4,852	4,747	4,781	4,806	4,886	4,650	4,563	-8.4
Part-time	3,542	3,543	3,525	3,746	3,869	4,842	3,435	3,616	3,896	10.0
Community Colleges										
Full-time	1,455	1,307	1,453	1,478	1,501	1,492	1,535	1,525	1,528	5.0
Part-time	1,795	1,835	1,865	2,166	2,366	2,433	1,949	2,352	2,115	17.8
INDEPENDENT										
Four-Year										
Full-time	18,279	19,011	19,244	19,383	19,413	20,094	20,050	20,789	20,930	14.5
Part-time	16,345	15,023	14,562	15,543	17,221	16,882	16,970	16,535	16,790	2.7
Two-Year										
Full-time	456	479	465	452	472	451	463	482	477	4.6
Part-time	427	391	473	481	542	557	510	548	439	2.8
PROPRIETARY										
Four-Year										
Full-time	21	54	58	54	68	54	56	35	47	123.8
Part-time	562	488	504	568	536	539	532	522	538	-4.3
Two-Year										
Full-time	459	506	573	611	608	534	555	531	500	8.9
Part-time	377	369	397	424	491	550	615	584	540	43.2

Source: NYSED, Office of Postsecondary Education Policy Analysis
Higher Education Data System

Figure 40
Percent of Faculty Over Age 60
by Sector in 1980 and 1988

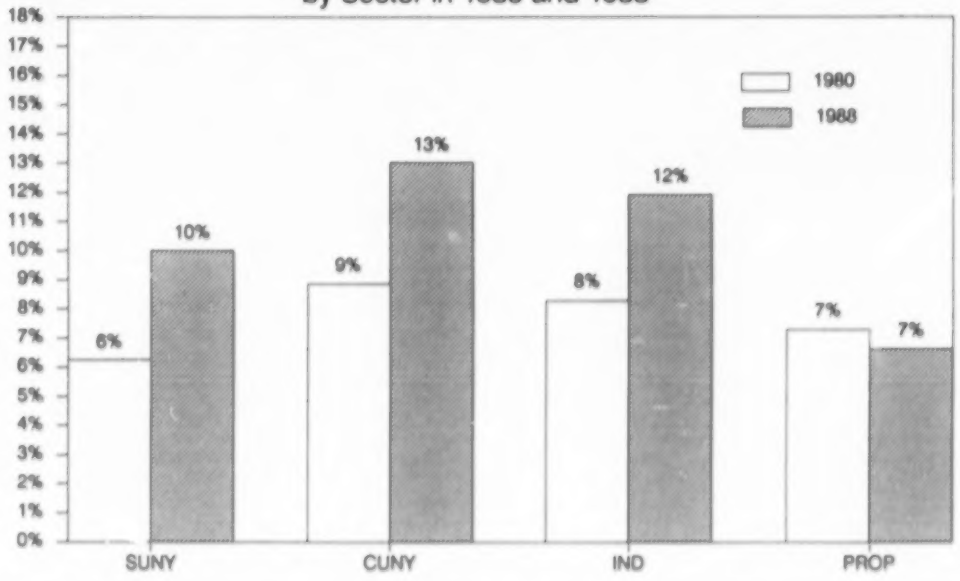
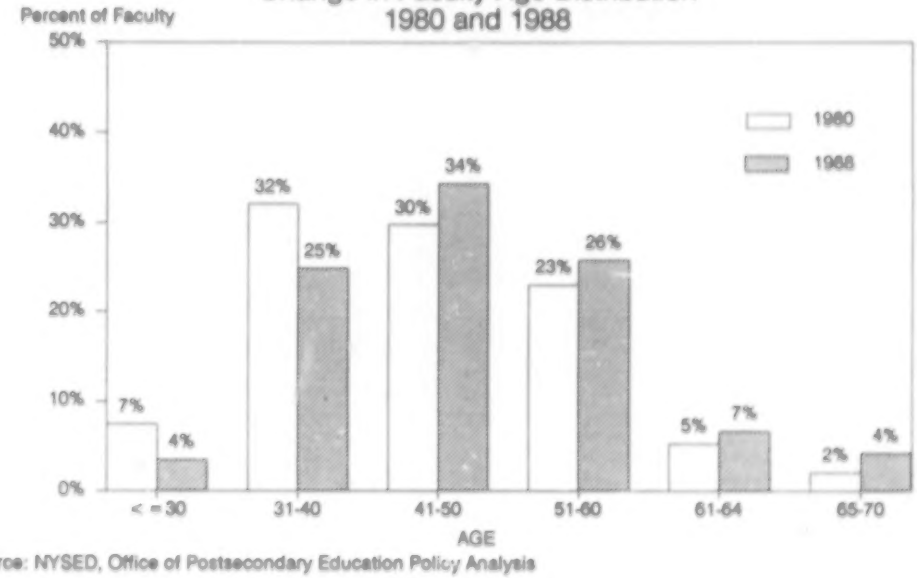


Figure 41
Change in Faculty Age Distribution
1980 and 1988



Source: NYSED, Office of Postsecondary Education Policy Analysis

... supply and demand are moving in different directions in doctoral education. The number of U.S. citizens receiving doctorates has declined for over a decade. Our capacity to reverse that decline is severely constrained by our inability to attract larger numbers of non-Asian minorities and women into doctoral programs (The PhD Shortage: The Federal Role, January, 1990, p. iii).

In New York, there has not been a general shortage of faculty yet, but shortages of faculty in specific disciplines have developed throughout the 80's. As early as 1981-82 colleges reported particular difficulty in recruiting faculty in chemical engineering, electrical and computer engineering, industrial engineering, and mechanical engineering. Information provided for the 1984 Statewide Plan indicated that both State University and City University were finding it difficult to recruit new faculty in the sciences, engineering, and computer science/data processing. SUNY also reported difficulty in recruiting faculty in business disciplines (particularly accounting and finance) and in most areas of medicine.

These recruiting difficulties have continued and spread to additional disciplines. State University, City University, and independent institutions reported for the 1988 Plan recruiting difficulties in business and management, computer science/data processing, engineering/engineering technologies, mathematics, the physical sciences, and nursing.

For this Progress Report, we asked institutions to tell us the extent to which they felt it necessary to enrich salary or benefit offers in order to attract new faculty in specific disciplines. There were six disciplines in which more than half the institutions that offered the discipline reported that they "must offer" or "often offer" enrichments: accounting, finance, computer science, chemical engineering, electrical engineering, and engineering technology.

Faculty supply for the future turns on the availability of doctorally-prepared candidates. Nationally, the production of doctorates has remained fairly stable over the past couple of decades, but this resulted from a sharp increase in the number of doctorates awarded to non-resident aliens. When doctorates to non-resident aliens are excluded, the actual number of doctorates awarded in the United States declined by almost 11 percent between 1972 and 1987. In 1972, 32 percent of all doctorates were awarded to U.S. citizens; by 1987 that dropped to 71 percent.

A slightly different situation prevails in New York State, where the number of doctorates increased from 3,254 in 1980-81 to 3,550 in 1987-88 (9.1 percent). The increase in the number of doctorates awarded is exclusively the result of the substantial increase in doctorates awarded to non-resident aliens. In 1980 non-resident aliens accounted for 10 percent of New York doctorates; by 1988 their share had risen to 18 percent.

Not only has the increase in doctoral degrees been caused by the large increase in degrees awarded to non-resident aliens but those degrees are particularly concentrated in mathematics and science. Nationally, the percentage of doctorates in the physical sciences earned by U.S. citizens dropped from 79 percent in 1972 to 61 percent in 1987, and in engineering from 67 to 42 percent during that period.

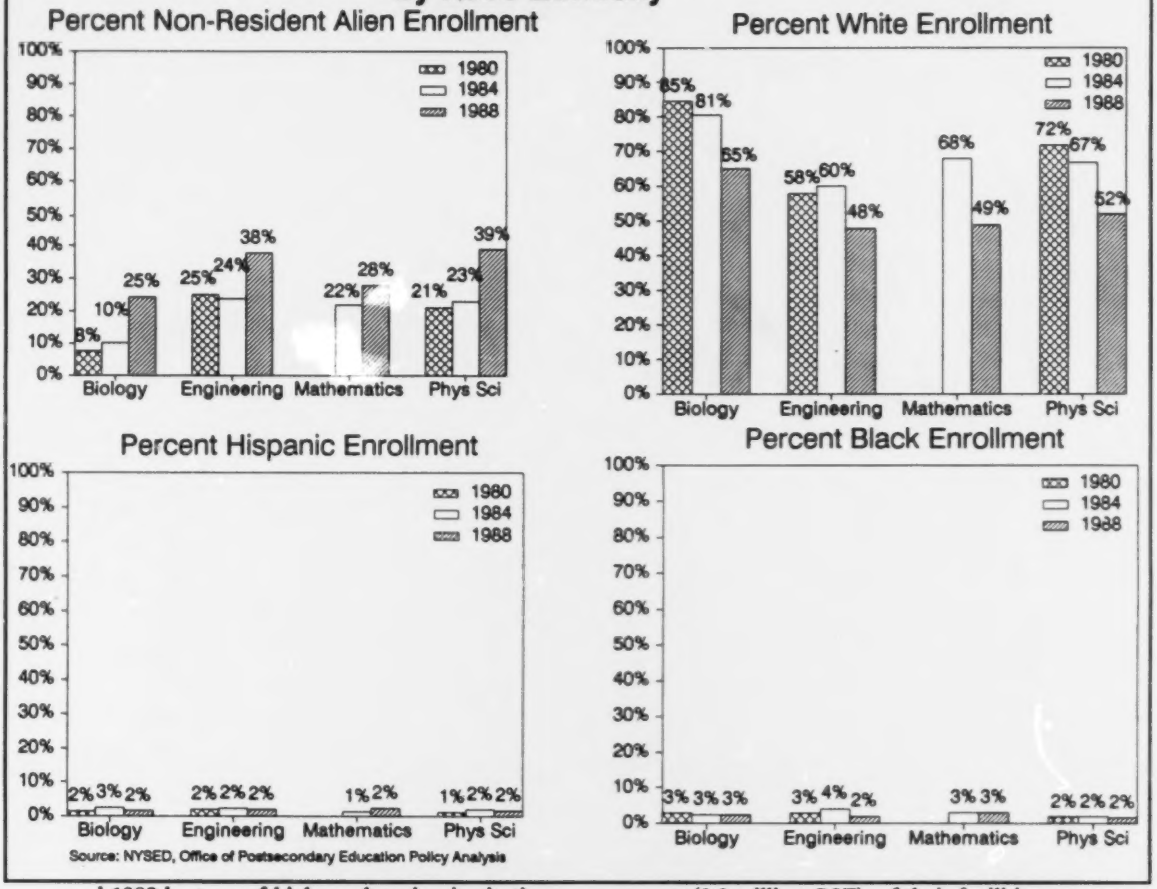
Figure 42 shows a similar pattern in New York State by showing enrollment in selected graduate programs by race/ethnicity for 1980, 1984, and 1988. The graph shows substantial increases in the enrollment of non-resident aliens in biology, engineering, mathematics and the physical sciences. Conversely, white American enrollment in those fields has declined substantially while minority American enrollment has remained basically unchanged at very low levels (two to three percent).

Facilities and Equipment Needs

The 205.5 million gross square feet of higher education facilities in New York State are the physical framework within which our colleges and universities pursue their missions. Table 25, below, shows the total gross square feet for 1982

Figure 42

Enrollment in Selected New York Graduate Programs by Race Ethnicity



Source: NYSED, Office of Postsecondary Education Policy Analysis

and 1988 by type of higher education institution and condition. Total square footage increased by 4.6 percent (9.1 million GSF), mainly due to increases at State University (4.3 million GSF) and City University (2.9 million GSF). The most recent self-reported facilities inventory indicates that in 1988, New York colleges and universities deemed 78.4 percent of all space in "satisfactory" condition and 19.4 percent in need of remodeling (see Table 26). Since 1982 there has been a small (1.1 percent) decline in satisfactory space, and a somewhat commensurate (1.9 percent) increase in space that requires remodeling. The greatest self-reported needs for remodeling were found in the public sectors. In 1988 SUNY reported that 27.9 percent (23.4 million GSF) and CUNY, 46.5 percent (9.3 million GSF), of their facilities were in need of remodeling. Since 1982 facilities in need of remodeling have increased by 6.5 percent at SUNY and 16.8 percent at CUNY. The independent sector showed a 62.8 percent increase in facilities in need of remodeling, from 4.3 million GSF in 1982 to 7.1 million GSF in 1988.

Deferred Maintenance.

The quality and condition of that vast capital resource greatly influences the level of success achieved by the institutions. A recent report by the Forum for College Financing portrays our facilities as a "diminishing endowment" resulting from the practice of deferred maintenance. In deference to other needs competing for limited

TABLE 25

Total Gross Square Feet By Condition
(In Thousands of GSF)

	Satisfactory		In Need of Rehabilitation		Demolition or Termination Planned or Required		Total	
	1982	1988	1982	1988	1982	1988	1982	1988
SUNY								
State Ops. [1]	44,109	45,791	21,316	22,789	938	1,183	66,363	69,763
Comm.Colleges	11,763	13,520	667	614	868	96	13,298	14,230
Total	55,872	59,311	21,983	23,403	1,806	1,279	79,661	83,993
CUNY [2]								
Sr.Coll/Grad Ctr.	4,368	6,123	5,924	6,925	2,896	2,147	13,188	15,195
Comm.Colleges	1,076	1,831	2,062	2,405	821	650	3,959	4,886
Total	5,444	7,954	7,986	9,330	3,717	2,797	17,147	20,081
Independent	94,325	92,752	4,349	7,080	356	488	99,030	100,320
Proprietary	580	1,139	-	-	-	-	580	1,139
Total	94,905	9,389	-	-	-	-	99,610	101,459
Total Public	61,316	67,265	29,969	32,733	5,523	4,076	96,808	104,074
Total Non-Public	94,905	93,891	4,349	7,080	356	488	99,610	101,459
Gross Total	156,221	161,156	34,318	39,813	5,879	4,564	196,418	205,533

[1] *Includes Central Administration*
[2] *Centra Administration apportioned between Senior Colleges/Graduate Centers and Community Colleges, based on FTES ratio.*

TABLE 26

Gross Square Feet By Condition, as Percent of Total by Type of Institution

	Satisfactory		In Need of Renovation		Demolition or Termination Planned or Required		Total	
	1982	1988	1982	1988	1982	1988	1982	1988
SUNY								
State Ops. [1]	66.5	65.6	32.1	32.7	1.4	1.7	100%	100%
Comm.Colleges	88.4	95.0	5.0	4.3	6.6	.7	100%	100%
Total	70.1	70.6	27.6	27.9	2.3	1.5	100%	100%
CUNY [2]								
Sr.Coll/Grad Ctr.	33.1	40.3	44.9	45.6	22.0	14.1	100%	100%
Comm.Colleges	27.2	37.5	52.0	49.2	20.8	13.3	100%	100%
Total	31.7	39.6	46.6	46.5	21.7	13.9	100%	100*5
Public	63.3	64.6	31.0	31.5	5.7	3.9	100%	100%
Independent/Prop.	95.3	92.5	4.4	7.0	.3	.5	100%	100%
Gross Total	79.5	78.4	17.5	19.4	3.0	2.2	100%	100%

[1] *Includes Central Administration*
[2] *Centra Administration apportioned between Senior Colleges/Graduate Centers and Community Colleges, based on FTES ratio.*

resources, maintenance at some campuses has been postponed for major systems such as roofs; heating, ventilation, and air conditioning (HVAC); and electrical. Nationwide, there is an estimated need for a $60 billion investment to cope with maintenance deferred over the years. A recent survey found that for every $1.00 spent on maintenance in 1988, colleges and universities deferred spending $4.00. A sobering example of such needs was one college that saved $8,000 over ten years by not painting pillars on several buildings. Now rotted, the pillars will cost $350,000 to replace. Falling masonry at a college in New York was judged a safety hazard in 1984 and would have cost $100,000 to repair. Left in disrepair, the cost climbed to $650,000 in 1988.

The physical plants of our colleges and universities would cost over $20 billion to replace at a conservative cost estimate of $100 per gross

square foot. That is almost five times the size of the total value of the monetary endowments of these institutions. Some institutions that normally adopt very conservative monetary investment policies subject to strict oversight by their governing boards put their more valuable facilities at risk by deferring maintenance. Deferred maintenance is a threatening liability because it is one not reflected on an institution's financial statements.

It proved difficult to assess the deferred maintenance needs of institutions in New York because so few have conducted a Comprehensive Facilities Audit (or its equivalent) as recommended in the 1983 Association of Governing Boards, Association of Physical Plant Administrators, and National Association of College and University Business Officers Audit Workbook. Only 20 percent (45) of the responding colleges and universities reported that they have undertaken this self evaluation. Sixty-six institutions indicated deferred maintenance needs, most in the independent sector (83 percent). In monetary terms, however, SUNY reported 1989 deferred maintenance needs of $634 million, and the independent sector respondents reported $570 million. CUNY colleges and responding proprietary institutions reported almost no deferred maintenance needs.

Sixty-six institutions reported deferred maintenance needs which will cost $1.2 billion to correct, but only little more than half of them have plans to fund the accumulated backlog within the next seven years. Public institutions (predominantly SUNY) reported a slightly greater deferred maintenance need than did independent institutions. Respondents estimate about 28 percent of the total need is "urgent," with over 18.5 million gross square feet in need of immediate repair at an estimated cost of $277 million.

The problem will not be resolved quickly. Institutions estimate that the 1996 level of deferred maintenance needs will reach $1.8 billion, a 52 percent increase over the current level. SUNY projected a need for $1.35 billion, 74 percent of the total in 1996.

Financing deferred maintenance is problematic. Few institutions are fortunate enough to attract major donors who wish to be remembered for the roof or for repairs made possible by their generous contributions. Most independent institutions, therefore, are left to their own means to fund deferred maintenance. Independent sector respondents indicated that 36 percent of the deferred maintenance needs would be met from internal capital and only 16 percent from donations. Only 15 percent is anticipated to be met from tax-exempt borrowing.

The survey of institutions for the 1990 Progress Report may have only scratched the surface of this subject since it revealed so few schools (45 of 217) reporting that they conducted a Comprehensive Facilities Audit or its equivalent. The Regents urge all schools that have not engaged in this self-evaluation do so within the next 12 months. It is important to be aware of the existence of deferred maintenance needs at an early stage when a relatively small commitment can obviate the need for greater expenditures in the future.

Those institutions that have taken the first step and identified deferred maintenance needs should develop plans to address those needs. Less than half of all the respondents with needs indicated that they have plans in place to fund repairs. We urge those institutions without action plans to develop them over the next 12 months. We also urge the New York State Dormitory Authority to reach out to institutions that need assistance to help them identify needs and cost effective solutions.

CHAPTER VI

A LOOK AHEAD: THE 1992 STATEWIDE PLAN

The 1990 Progress Report on the Regents Statewide Plan for the Development of Postsecondary Education 1988 shows that our higher education system is in good health, providing education for future workers and preparing individuals to participate fully in our democracy. With New York's ample student aid programs, the system provides access and choice. Colleges and universities directly and indirectly contribute to the State's economy and its cultural well-being.

Yet there are signs that the coming years may be especially challenging ones for higher education.

- **Enrollment declines will put pressure on institutional budgets.**
- **Some institutions may be forced to close, while the quality of others may suffer.**
- **Attracting, educating, and graduating minority students will require increased efforts.**
- **Looming faculty shortages will threaten both the range and quality of academic programs.**
- **Financing will remain a prime concern -- not only providing adequate financial aid for students but also adequate financing for the institutions so that they are able to continue to provide education of quality. Continuing to do more with less for long periods may undermine vital parts of the enterprise.**

More than ever before, we are called upon to create a vision for higher education as we prepare to enter a new century. The 1992 Statewide Plan will need to put educational issues in a broad social context while at the same time looking at the specific problems New York State faces, particularly in its role of preparing the citizens and work force of the 21st century, and assuring the literacy of all adults and opportunities for lifelong learning. Developing the Plan will require the cooperation of all the sectors, as well as discussions with legislative staff, the executive chamber, business, labor, other State agencies, and others interested in higher education.

As part of the preparation for the 1990 Progress Report, staff have begun to identify issues and to initiate a more collaborative process for the development of the 1992 Statewide Plan. In the past, we have consulted with numerous outside parties to develop the key issues for the Statewide Plan. We are going to do so again, but with greater intensity. As a starting point, a cross-section of college and university presidents and other leaders from education, business, and society at large will be asked to identify major issues facing higher education. These issues will then be discussed with the Commissioner's Advisory Council on Postsecondary Education, with staff from the Legislature and the Executive Chamber, and with other interested parties. By the spring of 1991, the key issues should be clearly defined so that the Bulletin of the 1992 Statewide Plan can then be developed in consultation with the leaders of the four sectors, as required by law.

The 1992 Statewide Plan will call for a more fully articulated system of higher education to meet the needs of all students in the State. The 1988 Statewide Plan and this Progress Report show that there are many unmet needs, particularly among minorities, graduate students, and the older adult population. For example, how do we meet the needs of an aging population, which demographers tell us will increase markedly in the 21st century? Addressing these needs will receive high priority.

Several issues identified in this Progress Report will be considered for the 1992 Statewide Plan. They include

- **(1) recruitment and retention of members of underrepresented minority groups in undergraduate and graduate study,**
- **(2) assuring an adequate supply of qualified faculty members and other scholars and researchers by increasing the number of Americans undertaking full-time doctoral study in key fields,**
- **(3) assisting institutions to maintain civil campus climates conducive to learning,**
- **(4) encouraging increased collaboration between colleges and schools, and**
- **(5) meeting the needs of transfer students more satisfactorily so that they can move from one institution to another without losing time or credit for the work they have already successfully completed.**

There will be continued attention to academic quality, particularly in undergraduate education. Recent national reports indicate that classes are becoming more crowded and that institutions are lowering their standards in order to attract more students. While remaining diligent in looking at academic quality, as revealed in curricula, staffing, and other resources, the Regents are increasingly focusing on ensuring that institutions provide sufficient academic and related support to enable admitted students to achieve their educational objectives. How colleges address racism and other problems relating to campus life and build humane communities is an important related topic that must receive attention in the 1992 Plan as well.

While it will be too early by 1992 to determine the full impact of the Liberty Scholarship program, we will attempt to assess whether the Liberty program shows promise of producing the desired result of encouraging more economically disadvantaged students to undertake higher education, as we look at enrollments in the fall of 1991.

Finally, as both the State and national economies continue to slow down and government budgets become more austere, examining costs, productivity, and accountability becomes even more important and will need to be addressed. Are there optimal teaching loads? What are appropriate faculty roles? Should campuses concentrate their programming in certain areas to be more cost effective and more responsive to needs of the work force? What can be done to help institutions maintain quality at a cost which they can afford and enable significantly more of their students to earn degrees? How can higher education make more effective use of technology in providing learning opportunities on campus and "at-a-distance?"

The 1992 Plan needs to emphasize the legitimate roles of the Regents and the State Education Department as consumer advocates who try to improve the system for the students that it serves and as major participants in the economic development of the State. In the 1992 Plan we need to challenge the accepted ways of conducting higher education and begin to mold an even more effective system for the new century. To do so, we need the assistance and cooperation of the entire education community, the business community, and the policy-makers in New York State.

APPENDIX A

SUMMARY OF MASTER PLAN AMENDMENTS, 1988-1990

Approved by the Regents
November 1, 1988, through October 31, 1990

Independent Institutions

Albany College of Pharmacy (4/14/89)
Authorized Albany College of Pharmacy to confer the degree of Doctor of Pharmacy (Phar.D.) and to offer a Phar.D. program in pharmacy.

Cazenovia College (11/18/88)
Authorized Cazenovia College to confer the degrees of Bachelor of Science (B.S.) and Bachelor of Professional Studies (B.P.S.) and to offer two upper-division programs, one in applied arts and sciences leading to the Bachelor of Science degree and one in fashion merchandising leading to the Bachelor of Professional Studies degree.

The College of Saint Rose (4/27/90)
Authorized The College of Saint Rose to offer a Bachelor of Arts (B.A.) program in psychology.

Fordham University (11/18/88)
Authorized Fordham University to confer the degree of Master of Science for Teachers (M.S.T.) at its Tarrytown campus and to offer an M.S.T. program in elementary education at that campus and to offer a Master of Science in Education (M.S. in Ed.) in teaching English to speakers of other languages at the Tarrytown campus.

Fordham University (10/13/89)
Authorized Fordham University to offer a Doctor of Philosophy (Ph.D.) program in developmental psychology.

Graduate School of Figurative Art (3/17/89)
Authorized the Graduate School of Figurative Art to confer the degree of Master of Fine Arts (M.F.A.) and to offer an M.F.A. program in studio art.

Iona College (2/17/89)
Authorized a consolidation of Iona College and Elizabeth Seton College under the name of Iona College and authorized the consolidated institution to offer all the programs, confer all the degrees, and operate all of the branch campuses of the predecessor institutions.

Iona College (2/16/90)
Authorized Iona College to offer a Bachelor of Arts (B.A.) program in area studies.

Long Island University (1/18/89)
Authorized Long Island University to offer a Master of Science (M.S.) program in mathematics, 7-12, at its Westchester campus.

Long Island University (7/27/90)
Authorized Long Island University to confer the degree of Doctor of Psychology (Psy.D.) at its C.W. Post campus and to offer a Psy.D. program in clinical psychology at the C.W. Post campus.

Mount Sinai School of Medicine (1/18/89)
Authorized Mount Sinai School of Medicine to confer the degree of Master of Science (M.S.) and to offer an M.S. program in community medicine.

Manhattan College (11/18/88)
Authorized Manhattan College to offer a Master of Science (M.S.) program in biotechnology jointly with the College of Mount Saint Vincent.

Marist College (12/15/89)
Authorized Marist College to offer a Master of Arts (M.A.) program in educational psychology.

Molloy College (12/16/88)
Authorized Molloy College to confer the degree of Master of Science (M.S.) and to offer an M.S. program in nursing, with the condition that such approval does not extend master plan authority for other master's degree programs at Molloy College.

Molloy College (9/15/89)
Authorized Molloy College to offer an Associate in Applied Science (A.A.S.) program in respiratory care.

New School for Social Research (7/28/89)
Authorized the New School for Social Research to confer the degree of Master of Science (M.S.) at its main campus and its Department of Mental Hygiene branch campus; and to offer M.S. programs in nonprofit management, human resources management, urban policy analysis and management, tourism and travel management, and health services management at the main campus and an M.S. program in health services management at the Department of Mental Hygiene branch.

New School for Social Research (4/27/90)
Authorized the New School for Social Research to confer the degree of Master of Architecture (M.Arch.) and to offer an M.Arch. program in architecture.

New York University (2/17/89)
Authorized New York University to confer the degree of Master of Music (M.M.) and to offer an M.M. program in music technology.

New York University (7/28/89)
Authorized New York University to offer a Doctor of Philosophy (Ph.D.) program in neural science.

New York University (7/27/90)
Authorized New York University to offer an Associate in Applied Science (A.A.S.) program in dental hygiene.

Niagara University (3/17/89)
Authorized Niagara University to confer the degree of Bachelor of Fine Arts (B.F.A.) and to offer a B.F.A. program in theater studies.

Niagara University (5/25/90)
Authorized Niagara University to offer a Bachelor of Arts (B.A.) program in communication studies.

Rensselaer Polytechnic Institute (6/16/89)
Authorized Rensselaer Polytechnic Institute to confer the degree of Master of Fine Arts (M.F.A.) and to offer an M.F.A. program in electronic arts.

Rochester Institute of Technology (12/15/89)
Authorized Rochester Institute of Technology to confer the degree of Doctor of Philosophy (Ph.D.) and to offer a Ph.D. program in imaging science.

Samaritan Hospital School of Nursing (5/19/89)
Authorized Samaritan Hospital School of Nursing to confer the degree of Associate in Science (A.S.) and to offer an A.S. program in nursing.

Syracuse University (3/23/90)
Authorized Syracuse University to confer the degree of Master of Laws (LL.M.) and to offer an LL.M. program in law.

Touro College (7/27/90)
Authorized Touro College to offer a physician's assistant program leading to the Bachelor of Science (B.S.) degree at its Huntington campus.

Union College (1/18/89)
Authorized Union College to confer the degree of Master of Arts in Teaching (M.A.T.) and to offer an M.A.T. program in educational studies.

University of Rochester (7/28/89)
Authorized the University of Rochester to confer the degree of Master of Public Health (M.P.H.) and to offer an M.P.H. program in community health.

Yeshiva University (9/14/90)
Authorized Yeshiva University to offer a Doctor of Philosophy (Ph.D.) program in health psychology.

Proprietary Colleges

The Berkeley School of New York City (6/22/90)
Authorized The Berkeley School of New York City to establish a branch campus in Port Jefferson Station and to offer at that branch campus certificate and diploma programs, but not degree programs, except to current students of The Berkeley School of Nassau. Rescinded the authority granted to The Berkeley School of Nassau to confer the degrees of Associate in Applied Science (A.A.S.) and Associate in Occupational Studies (A.O.S.).

Bryant and Stratton Business Institute of Albany (4/14/89)
Authorized Bryant and Stratton Business Institute of Albany to offer an Associate in Occupational Studies (A.O.S.) program in electronic technology.

Bryant and Stratton Business Institute of Buffalo (11/18/88)
Authorized Bryant and Stratton Business Institute of Buffalo to offer an Associate in Occupational Studies (A.O.S.) program in electronic technology at its Eastern Hills campus.

Bryant and Stratton Business Institute of Buffalo (5/19/89)
Authorized Bryant and Stratton Business Institute of Buffalo to establish a branch campus in Lackawanna, and to confer the degree of Associate in Occupational Studies (A.O.S.) and offer A.O.S. programs in business and commerce technologies, data processing technologies, health services and paramedical technologies, and mechanical and engineering technologies at that branch campus.

Bryant and Stratton Business Institute of Rochester (11/18/88)
Authorized Bryant and Stratton Business Institute of Rochester to offer an Associate in Occupational Studies (A.O.S.) program in electronic technology at its Henrietta branch campus.

Bryant and Stratton Business Institute of Syracuse (11/18/88)
Authorized Bryant and Stratton Business Institute of Syracuse to offer an Associate in Occupational Studies (A.O.S.) program in electronic technology.

Five Towns College (5/25/90)
Authorized Five Towns College to confer the degree of Bachelor of Music (Mus.B.) and to offer a Mus.B. program in jazz/commercial music. This action does not extend authorization for additional baccalaureate programs at this College without further master plan amendment.

State University of New York

SUNY Albany (3/23/90)
Authorized the State University Board of Trustees to confer the degree of Master of Public Health (M.P.H.) at the State University of New York at Albany and to offer an M.P.H. program in public health at SUNY Albany.
Approved by the Governor on 4/23/90.

SUNY Albany (6/22/90)
Authorized the State University to offer a Doctor of Philosophy (Ph.D.) program in information science at SUNY Albany.
Approved by the Governor on 7/31/90.

SUNY Albany (9/14/90)
Authorized the State University to offer a Doctor of Philosophy (Ph.D.) program in industrial-organizational psychology at SUNY Albany.
Awaiting action by the Governor.

SUNY Binghamton (6/16/89)
Authorized the State University Board of Trustees to confer the degree of Bachelor of Music (Mus.B.) at the State University of New York at Binghamton and to offer a Mus.B program in music performance at SUNY Binghamton.
Approved by the Governor on 7/6/90

SUNY Binghamton (7/28/89
Authorized the State University Board of Trustees to confer the degree of Master of Fine Arts (M.F.A.) at the State University of New York at Binghamton and to offer an M.F.A program in acting at SUNY Binghamton.
Approved by the Governor on 7/31/90.

SUNY Buffalo (9/14/90)
Authorized the State University to offer a Doctor of Philosophy (Ph.D.) program in social welfare at SUNY Buffalo.
Awaiting action by the Governor.

SUNY Health Science Center at Brooklyn (6/22/90)
Authorized the State University to offer a Bachelor of Science (B.S.) program in physician's assistant at the State University Health Science Center at Brooklyn.
Approved by the Governor on 8/3/90.

SUC Brockport (1/17/90)
Authorized the State University Board of Trustees to confer the degree of Master of Fine Arts (M.F.A.) at the State University College at Brockport and to offer an M.F.A. program in visual studies at SUC Brockport.
Approved by the Governor on 8/8/90.

SUC Fredonia (11/17/89)
Authorized the State University to offer a Master of Science (M.S.) program in speech pathology at the State University College at Fredonia.
Approved by the Governor on 1/17/90.

SUC Geneseo (6/16/89)
Authorized the State University to offer a Bachelor of Arts (B.A.) program in communication at the State University College at Geneseo.
Approved by the Governor on 12/27/90.

SUNY Institute of Technology at Utica/Rome (9/15/89)
Authorized the State University to offer a Bachelor of Arts (B.A.) program in psychology at the State University of New York Institute of Technology at Utica/Rome.
Approved by the Governor on 8/13/90.

SUNY Institute of Technology at Utica/Rome (11/17/89)
Authorized the State University Trustees to confer the degree of Bachelor of Business Administration (B.B.A.) at the State University Institute of Technology at Utica/Rome and to offer a B.B.A. program in finance and in business and public administration, and a Bachelor of Science (B.S.) program in technical communication, at the Institute.
Approved by the Governor on 8/8/90.

Broome Community College (1/18/89)
Authorized Broome Community College to offer an Associate in Applied Science (A.A.S.) degree program in physical therapist assistant.
Approved by the Governor on 2/27/89.

Genesee Community College (2/16/90)
Authorized Gensee Community College to offer an Associate in Applied Science (A.A.S.) degree program in physical therapist assistant.
Approved by the Governor on 7/3/90.

Herkimer County Community College (3/23/90)
Authorized Herkimer County Community College to offer an Associate in Applied Science (A.A.S.) degree program in physical therapist assistant.
Approved by the Governor on 7/3/90.

Jamestown Community College (12/15/89)
Authorized Jamestown Community College to offer an Associate in Applied Science (A.A.S.) degree program in nursing at its Cattaraugus County campus.
Approved by the Governor on 7/3/90.

Niagara County Community College (1/17/90)
Authorized Niagara County Community College to offer an Associate in Applied Science (A.A.S.) degree program in physical therapist assistant.
Approved by the Governor on 7/3/90.

The City University of New York

The College of Staten Island (9/15/89)
Authorized the City University to offer a Bachelor of Science (B.S.) program in communications at The College of Staten Island.
Approved by the Governor on 6/29/90.

New York City Technical College (7/28/89)
Authorized the City University to offer an upper-division Bachelor of Technology (B.Tech.) program in telecommunications technology at New York City Technical College.
Approved by the Governor on 7/3/90.

Appendix B

STATUS OF REGENTS ACTIONS AND RECOMMENDATIONS PROPOSED IN THE 1988 PLAN

At the time of forwarding this report, the Governor has not acted on the 1988 Statewide Plan. Further, many of the actions and recommendations in the Plan require action by the Legislature, either to appropriate funds or to amend statutes; these actions, by and large, have not occurred. Consequently, this Progress Report must report that most of the Plan's actions and recommendations are continued. We can report, however, that a few have been achieved, either wholly or partially. We are discontinuing some recommendations in light of changing conditions since the fall of 1988.

Achieved

The following actions and recommendations have been achieved and therefore are discontinued.

The Regents call on the public universities to examine both the adequacy of their funding for noncredit education and the methods they use to assure the quality of these offerings in order to report fully on these efforts in the 1990 Progress Report.

For this Progress Report, institutions in all sectors reported on the methods they use to assure the quality of their noncredit offerings. The public university systems regularly seek to assure adequacy of funding for the noncredit courses offered by their campuses.

In their master plans, State University and City University have pointed out the growth in the proportion of their enrollments who are older, working New Yorkers attending college part-time. They have pointed out that such part-time students require the same amount of many services as do full-time students. The Regents concur with this view and have approved recommendation #20 in the SUNY Master Plan, which seeks "improved methods for allocating the resources available to public higher education" that more adequately reflect new enrollment patterns and student demand for services. Therefore, the Regents recommend to the Governor and the Legislature that the present methods of determining levels of State support for State University and City University (State-funded campuses and community colleges) be modified in ways that recognize that part-time students require the same amounts of some services as do full-time students.

Beginning in the 1990-91 State fiscal year, the funding formula for community college operating budgets has been modified to add a new component that provides $50 per part-time student enrolled in credit-bearing programs in addition to funds per full-time equivalent students.

Partially Achieved, Continued

To strengthen teaching, the Regents will review and revise the regulations governing the certification of teachers.

Certification regulations have been reviewed and revised for teachers of kindergarten through grade 6 and of academic subjects, grades 7 through 12. The Regents intend to continue this process with other fields of certified school personnel.

The Regents and the Department will collaborate with other State agencies to develop training projects designed to increase the skill levels of minority staff currently employed as non-professionals and paraprofessionals who, with additional education and training, could qualify for professional licensure.

This recommendation from the 1984 Plan supports the development of the COPREP program to provide educational opportunities to State employees seeking to advance from non-professional and paraprofessional levels to professional licensure in certain health professions.

The Regents and the Department will study different approaches to assuring continued competence in the professions and recommend legislation as appropriate.

As directed by legislation, the Department conducted a thorough study of continuing education for Certified Public Accountants. The report was issued in 1990. The Regents and the Department will consider the desirability of seeking action by the Legislature relating to continuing education for all professionals.

Continued

The Regents direct the Department to identify successful programs to recruit minority students to institutions which historically have enrolled few minorities or which are located in areas where the minority population is low. The Department will analyze these programs to identify the elements that make them successful and will share this information with the field.

This process is ongoing.

The Department will encourage institutions to adopt written, formal plans to recruit and retain underrepresented minority students and to measure their progress in meeting their goals.

This process is under way. This Progress Report indicates that, between 1987 and 1990, the proportion of institutions that lacked formal minority recruitment plans declined from 48 percent to 30 percent. At the graduate level it declined from 62 percent to 47 percent. Despite progress made, we must continue to urge those institutions without formal, written plans to recruit and retain members of underrepresented minority groups to develop, adopt, and implement such plans.

The Regents urge colleges and universities to work with elementary and secondary schools to meet the full range of community needs. They will consult with concerned groups to determine the most effective ways to support such efforts. The Regents call on the Statewide Committee on Educational Opportunity and the Commissioner's Advisory Council on Postsecondary Education for advice on actions the State might take to assist colleges and universities in their efforts to encourage greater numbers of pupils to complete high school.

There has been considerable effort in this area through such programs as the Stay in School Partnerships and the Liberty Partnerships, to name only two statewide initiatives. However, reducing the high dropout rates from high school, particularly evident among pupils from minority groups, will require a sustained commitment. Therefore, we continue to urge collaboration between higher education institutions and elementary and secondary schools to encourage greater numbers of pupils to complete high school.

The Regents will seek increased funding for programs that have been developed to aid disadvantaged minorities in pursuing pre-professional and professional study, including the Regents Professional Opportunity Scholarship Program, the Regents Health Care Professional Opportunity Scholarship Program, the Collegiate Science and Technology Entry Program, and the Teacher Opportunity Corps. They will also seek increased funding for New York's special opportunity programs (SEEK, College Discovery, EOP, and HEOP) sufficient to increase significantly both the level of support per student and the number of students served.

The Regents have sought statutory or budgetary improvements in these programs, but improvements have been limited. They will continue to seek statutory enhancements, to seek increased funds for those programs included in the Department's budget, and to urge increased funding for the programs in the budgets of the Higher Education Services Corporation, State University, and City University.

The Regents will identify the financial needs that are not met by current State-supported student aid programs and prepare legislation to assure that student aid will address these financial needs. Particular emphasis will be placed on providing adequate aid to those most in need. Also, the needs of the increasing number of part-time and nontraditional students will be addressed. To encourage financially-able parents to save for their children's education, the Regents will advance legislation to establish a college savings plan.

The Regents have included several sueh bills in their 1989 and 1990 legislative programs. They were not enacted. The Regents intend to include a number of similar bills in their 1991 program.

To provide expanded and enriched experiences and opportunities for Educational Opportunity Center students, the Regents urge colleges and universities to form consortia with SUNY and CUNY campuses that sponsor EOCs in a manner similar to collaborative activities with the elementary and secondary schools. They also request that State University prepare, after consulting with City University, a plan for the development and operation of the Educational Opportunity Centers and submit it to the Regents and the Governor as part of the University's 1990 Progress Report.

The Regents continue to advocate the formation of college and university consortia that have collaborative relationships with Educational Opportunity Centers in order to further enhance opportunities for EOC students. State University has not submitted the requested plan for EOC development and operation. However, it was not required to do so since the Governor has not acted on the 1988 Statewide Plan.

The Regents recommend to the Governor that he seek from the Legislature additional funding to initiate or expand child care services on college campuses.

There is a growing demand for child-care services on campuses to meet the need of students with children. This Progress Report provides information on the availability of child-care services and on charges to students. State funding has directly influenced the growth of child-care services at SUNY and CUNY campuses, including community colleges. It should be expanded appropriately.

Faculty serve as role models; they are important in attracting and retaining students, including women and minority students. Therefore, the Regents call for greater efforts by colleges and universities to increase the representation of women and underrepresented minorities on their faculties to serve as role models and allow for other benefits resulting from diversifying the faculty. The Department will identify programs that have been successful in advancing this objective and will propose legislation to support such programs.

This is a continuing concern. Many institutions are seeking to address it, as this Progress Report indicates, and we need to continue to encourage those efforts. However, their effectiveness will continue to be limited until the supply of doctorally-educated women and minority-group members is increased significantly in all disciplines, as the next recommendation recognizes.

The Regents call on each of the State's 41 doctoral institutions, during each of the four years of this Plan, to increase annually by at least one, the number of doctoral students who are members of underrepresented minority groups in each discipline in which it offers doctoral study and to increase annually by at least one, the number of female doctoral students in each discipline in which it offers doctoral study and in which women are underrepresented at the doctoral level. In addition, the Regents will advance legislation to establish a program of fellowships to enable women and members of underrepresented minority groups who intend to pursue faculty careers in higher education to enroll in and complete programs leading to doctoral degrees.

This Progress Report includes information on recruitment, enrollment, and retention of female and minority graduate students at New York's public and independent doctorate-granting institutions. We call on those institutions to strengthen their efforts. The Regents included bills to create the proposed fellowship program in their 1989 and 1990 legislative programs. They were not enacted.

To better prepare teachers to work with at-risk students, the Regents will seek increased funding for the Teacher Opportunity Corps.

The Regents have sought such increases in the Department's budget requests. Between 1989-90 and 1990-91, no increase was provided by the Legislature, because of the State's fiscal condition.

The Regents and the Department will encourage Teacher Resource and Computer Training Centers to initiate pilot projects to improve articulation between secondary and postsecondary education. Such projects would bring together college faculty who are interested or involved in remedial/developmental education with secondary school faculty and administrators. Pilot activities might include the development of secondary school modules on study skills and time management, and review of modes and techniques of instruction. Successful pilot projects would serve as models for dissemination through the other Teacher Resource and Computer Training Centers.

The Department continues to take such activities into account in its administration of the Teacher Center program.

The Regents and the Department will work with the sectors and appropriate individuals and professional organizations in remedial/developmental education to develop . . . standards for reporting student progress and a broad agreement on appropriate credentials, standards of good practice, and methods for recognizing remedial/developmental faculty effectiveness.

This is an ongoing activity.

The Regents will seek enactment of legislation to create one or more university-based Centers for Applied Research on Aging, provide categorical aid in support of college and university credit-bearing curricula in gerontology, support model programs at postsecondary institutions that address the training and life-coping needs of the elderly, and support programs at postsecondary institutions to encourage volunteer service by students to elderly individuals.

The Regents included such a bill in their 1989 and 1990 State legislative program. It was not enacted.

Under the direction of the Regents, the Department will continue to conduct studies of the supply and demand for practitioners in selected licensed professions. Based upon these studies, the Regents will seek action by the State Legislature or the Congress to create or expand scholarship and fellowship programs in appropriate fields.

The Department has been carrying out these studies of licensed professions. Eight professions were surveyed in 1988-89, 1989-90, and 1990-91.

The Department will produce and disseminate information on ethics, laws, and rules suitable for use by educational programs in the licensed professions in New York.

The Department will continue this activity within budgetary constraints.

The Regents will seek the resources necessary to play a public oversight role in the review of graduate medical education in the approximately 500 residency training programs in New York State.

This is a continuing concern.

The Regents call on the institutions that prepare teachers to develop an institution-wide approach to their preparation with particular attention to providing a strong liberal arts education, a command of the subject matter, and professional education that will produce dynamic, resourceful teachers.

The current statewide review of baccalaureate teacher education has emphasized an institution-wide approach with the components identified above, and Department staff have been assisting the institutions in modifying their programs in line with the new certification regulations, which require a strong liberal arts education, a concentration in the subject to be taught, and the development of essential pedagogical skills.

The Regents call on the institutions that prepare teachers to encourage students to pursue fields where there are teacher shortages, such as foreign languages and special education, so that the elementary and secondary schools are able to hire enough teachers to implement the Regents Action Plan to Improve Elementary and Secondary Education Results in New York.

This is a continuing concern.

The Regents call on colleges and universities to consult with museums, libraries, and other cultural institutions in the State to determine their needs for preservice and inservice education of professional staff, and provide programs to meet those needs.

This Progress Report includes information on current levels of consultation and service, which are not as high as would seem effective for the purpose. The Regents continue to urge colleges and universities to help meet the needs of cultural institutions for preservice and inservice staff training.

The Regents and the Department will encourage colleges, universities, and Teacher Resource and Computer Training Centers to provide inservice activities to foster education for a global perspective, education for civic values, integration of the arts into the curriculum, application of emerging technologies to instruction, development of group dynamic skills, and other areas of special concern that are identified by school districts.

This is a continuing element in the Department's administration of the Teacher Center program.

The Regents call on colleges and universities to join with the Regents and the Department in developing proposals for State programs that would increase international understanding and educational opportunities for residents of developing nations by encouraging enrollment of foreign students in colleges and universities in all sectors in New York. Such programs must assure that enrollment of foreign students will not reduce opportunities for New Yorkers.

For some time, there has been a steady increase in the attractiveness of New York as a place for foreign students to undertake undergraduate or graduate education. The Regents urge New York colleges and universities to continue their efforts to serve students from other countries.

The Regents direct the Department to promote relationships between secondary schools and colleges for the purpose of offering academic incentives and enrichment to pupils, beginning no later than the seventh grade, to encourage them to continue their education. Particular emphasis should be placed on enrichment programs in science, mathematics, and foreign languages.

The Department will continue to seek extension of these efforts to the junior high and middle school grades. Funding to extend the STEP program from high school to those grades has not been available.

The Regents recognize the importance of encouraging students to complete high school to prepare for postsecondary education. Therefore, they will seek expansion of the Science and Technology Entry Program and the Stay in School Partnership Program. In addition, they call on colleges and universities to help improve counseling and guidance services for all middle, junior, and senior high school pupils to insure that they are aware of opportunities for postsecondary education and to develop programs to provide high school students with mentors and role models in order to foster high school completion and college participation.

For 1990-91, no increase in funding was provided for the STEP/CSTEP program, and a ten percent reduction was made in appropriations for the Stay in School Partnership program. For 1991-92, the Department's budget request seeks increased funds for each program. For Liberty Partnerships, $10.3 million was appropriated in 1989-90 and in 1990-91 $13.3 million (less than the amount called for in the statutory formula). The Department's 1991-92 budget request seeks a $17 million increase for Liberty Partnerships, which would restore funding to the statutory level.

The Regents call upon the Governor and the Legislature to enact legislation that will assist institutions to upgrade deteriorating or obsolete academic facilities and equipment -- particularly laboratory equipment, computer equipment, and equipment used to support instruction in more than one discipline.

The Regents have supported bills before the 1989 and 1990 sessions of the Legislature that would have provided aid to colleges and universities to acquire laboratory equipment. These bills were not enacted. They intend to continue to support such bills in 1991.

The Regents call on colleges and universities to join with them in urging the Congress to expand. . .the International and Foreign Language Studies programs in Title VI of the Higher Education Act, and to increase funding for international exchanges through such programs as the Fulbright and Fulbright-Hayes programs, International Visitors Program, and the Eisenhower and Humphrey fellowships.

In the present state of the world, programs that enhance international communication and understanding are more important than ever. The impending reauthorization by the Congress of the Higher Education Act makes this call especially pertinent.

Building on the work begun in the 1980 and 1984 Statewide Plans, the Department will continue to develop papers on the net cost of student attendance and the fiscal indicators for postsecondary education. Together these studies provide critical information for the development of sound recommendations on financing postsecondary education.

The Regents and the Department will issue an annual report on postsecondary education summarizing and analyzing standardized educational statistics on education costs from a newly developed and generally accepted data base. The analysis will be used for the purpose of informing discussion on policies to promote the most effective use of the State's resources for postsecondary education, and making recommendations on allocation of State resources.

Development and issuance of these reports are continuing responsibilities of the Department.

The Regents direct the Department to issue an annual institutional report based on information supplied to the Department through the Higher Education Data System. The report will contain trend information on such elements as degree completion, tuition and fee rates, enrollment, representation of minority and disabled persons in the student body and the faculty, and faculty and staff instructional costs.

The Department is continuing to develop this kind of a report, within constraints dictated by budget and other priorities.

Recognizing the need for periodic adjustment in aid for independent colleges, during the period of this Plan the Regents will seek legislation to enhance Bundy aid.

Bills to increase Bundy aid were included in the Regents 1989 and 1990 legislative program, but were not enacted. The Regents will include such a bill in their 1991 program.

To improve the monitoring of the use by independent institutions of State funds, the Regents will seek to assist those colleges that do not have adequate internal audit and internal control systems to develop and implement them.

The Department has sought from the Governor and the Legislature the funding it would need to offer this assistance, which it cannot make available from its present resources. So far, such funding has not been provided.

The Regents call on colleges and universities to undertake increased efforts to attract recent New York high school graduates planning to attend college in other states. After consulting with the Department of Economic Development, they will seek an appropriation to enable the Department to undertake an "I Love New York Colleges" campaign.

The Regents continue to urge colleges and universities to take such efforts. With the Liberty Partnership and Liberty Scholarship programs not yet fully operating, the Regents have not pursued funding for an "I Love New York Colleges" campaign. A proposal was submitted to the Economic Development Subcommittee of the Governor's Task Force to undertake such an effort.

The Regents will advance legislation to establish a program of grants to colleges and universities in New York State to enhance the resources available to untenured or nontenure-track faculty who are women or members of underrepresented minority groups. The resources could be used for supporting research projects, providing released time for pursuit of a terminal degree, or supporting other activities proposed by the institution and the untenured women or minority faculty members that are designed to improve those faculty members' prospects for tenure.

The Regents will propose legislation to establish a program under which the State will pay part or all of the educational loans of qualified women and members of underrepresented minority groups to accept faculty positions at institutions of higher education in New York State.

A bill to establish both programs was part of the Regents legislative program in 1989 and 1990 but was not enacted.

The Regents direct the Department to examine faculty supply and demand issues, identifying additional disciplines in which shortages may be anticipated. The Regents will seek enactment of bills to establish (1) State-supported fellowships for doctoral study in key fields and (2) State-supported teaching assistantships for persons studying for doctorates in engineering.

In view of the continued importance in this decade of doctoral study and research in engineering, computer science, mathematics, and the physical and biological sciences, the Regents recommend that the Governor propose to the Legislature the establishment of fellowship and scholarship programs to attract additional numbers of students to full-time doctoral study in those disciplines.

The Regents included such a bill in their 1989 and 1990 legislative programs. It was not enacted.

The Regents recommend that the Governor propose to the Legislature adequate funding for the Department's graduate program evaluations.

The Department's budget request will continue to seek adequate funding for this important ongoing function.

Maintenance of adequate resources for graduate education and research is essential to excellence in those areas; therefore, the Regents strongly urge the Governor to seek from the Legislature adequate support for the graduate education and research activities of New York's institutions, not solely in the natural sciences and the professions, but in the humanities and social sciences as well.

Adequate State funding for graduate education and research in all disciplines is a continuing concern, especially in light of the State's current fiscal condition.

The Regents and the Department urge the State University Trustees and the City University Trustees to adopt a detailed statement of policy to guide the setting of tuition levels that includes criteria to guide the determination of such levels.

Since the Governor approved this 1984 Plan action in 1986, neither the State University Trustees nor the City University Trustees has adjusted tuition charges, and neither has adopted a statement of policy on tuition.

The Regents and the Department will recommend allocations of funds as indicated under the 1984 Plan's goal of "Effective Use of Resources" to help maintain diversity.

The allocation of resources in support of diversity is a continuing Regents concern.

The Regents recommend to the Governor that a portion of the savings in State aid resulting from declining enrollments in all sectors, should they occur, be used to meet the special needs of access, the maintenance of quality, or both. This issue was first addressed in the Regents 1980 Statewide Plan, and the Regents agree with the Governor's response to the 1980 Plan that such a plan should not be a guarantee of long-term protection against enrollment declines. The Regents do not expect or require such a guarantee, but rather call for protection of the excellence and access which has been achieved in our postsecondary system.

This recommendation from the 1984 Plan was accepted in 1986 by the Governor, who pointed out that it should be resolved through the budget process. Since that is an annual process, this remains one of the Regents continuing concerns.

The Regents recommend that the Governor give consideration to implementing programs suggested by the sectors to assist them in their efforts to balance faculty supply and student demand, which also would assist in increasing the numbers of women and members of minority groups at the associate professor and professor ranks, and those who achieve tenure. Among the programs proposed are summertime research grants for faculty; creation of shared faculty positions; support for faculty retraining in high demand fields; and support for faculty exchanges with business, industry, schools, and government agencies.

The Regents continue to believe that these actions recommended in the 1984 Plan and accepted by the Governor in 1986 are appropriate to the extent the sectors continue to seek them.

The Regents urge colleges and universities to demonstrate the importance they attach to the study of languages other than English through their admission policies and their requirements for degrees.

This Progress Report provides information that suggests that most New York colleges and universities do not attach great importance to the study of languages other than English. Over the past five years, the number of colleges and universities requiring knowledge or study of a foreign language for undergraduate admission dropped from 45 to 27. The proportion of baccalaureate institutions requiring knowledge or study of a language other than English for a baccalaureate degree has declined. Only 28 of 103 responding graduate degree-granting institutions require such knowledge for admission to graduate study. Only 3 of the 38 Ph.D.-granting institutions in the State require foreign language competence for all Ph.D.'s they confer. (Seventeen more require it in some, but not all, fields.) These findings are dismaying. The Regents propose to pursue this issue further in the 1992 Plan.

Discontinued

The Regents will encourage the Congress to increase awards under the Pell Grant program to a maximum award of $4,000, with subsequent automatic cost-of-living adjustments based on the Higher Education Price Index. The other Federal programs of financial aid for disadvantaged students authorized by Title IV of the Higher Education Act should be fully funded.

The Regents will be making their proposals for reauthorization by the Congress of the Higher Education Act. Those proposals will address the Title IV programs in a comprehensive manner. Further analysis indicates that the recommendation in the 1988 Plan related to Pell Grants is not the best approach to enhancing federal student aid.

The Regents concur with the Independent Sector Master Plan's proposal that the State should "convene a special task force to explore ways in which minority enrollment in Ph.D. programs can be increased." They plan to convene a task force to identify ways to increase the representation of underrepresented minority groups in graduate programs, and will seek the funding needed to support and staff the deliberations of such a task force.

Since adoption of the 1988 Plan, the Association of Colleges and Universities of the State of New York (ACUSNY) has taken steps to increase graduate enrollments by members of underrepresented minority groups. The Regents and the Department will support ACUSNY's activities.

The Regents will propose legislation to fund voluntary literacy agencies and community-based organizations to establish Collegiate Literacy Volunteer Centers at cooperating postsecondary institutions.

The Regents have not pursued such legislation, but have given emphasis to other actions to strengthen literacy education in New York. Funding for involvement by these organizations is now possible as the result of 1990 legislation supported by the Department.

The Regents will advance legislation to fund acquisition by colleges of specialized instructional equipment and learning aids designed to assist persons with disabilities to complete their studies.

The Regents did not include such a bill in either the 1989 or 1990 legislative program. In June 1990, they adopted a new statement of policies concerning educational services for individuals with disabilities. It addresses services at higher education institutions but does not call for such legislation.

The Regents will propose legislation to establish faculty internships with appropriate State agencies (such as Correctional Services, Environmental Conservation, Health, Labor, and Transportation) to assist faculty to understand the issues confronting New York State so that they can incorporate study of those issues into curricula.

The Regents did not include such a bill in either their 1989 or 1990 legislative program. They do not plan to pursue such legislation given the State's fiscal condition.

The Regents direct the Department to study the feasibility and advantages to the State of connecting to NYSERNet appropriate State agencies and research facilities, as well as any Federal research facilities located in the State that are not already participating in the network.

With NYSERNet's growth since the adoption of the 1988 Plan such a study is no longer necessary.

The Regents will submit a legislative proposal that will (a) expand NYSERNet to include all higher education institutions that can benefit from participating in the network and (b) promote the development of NYSERNet as a means for providing delivery of distance learning and faculty exchange of ideas about curricula and instructional methods.

The Regents included such a bill in their 1989 and 1990 legislative programs. It was not enacted. They do not plan to include such a bill in the 1991 program. A proposal was submitted to the Economic Development Subcommittee of the Governor's Task Force, however.

The Regents direct the Department to explore with the Science and Technology Foundation and the Department of Economic Development joint sponsorship of a statewide conference to make college-based researchers more broadly aware of the potential for developing their research results into useful products.

The Regents direct the Department (a) to encourage and assist the efforts of Federal research facilities in New York State to form university-industry partnerships, and (b) to publicize to all higher education institutions in the State the potential for collaborative research and faculty-staff exchange with Federal research laboratories under the Federal Technology Transfer Act of 1986, and assist those seeking to make use of such opportunities.

In December 1989, the Department joined with the New York State Science and Technology Foundation to sponsor the Governor's Conference on Science and Engineering Education, Research and Development: Developing New York State's Action Plan for the 1990's. The effort of developing that action plan, which has involved the Department and other parties, has superseded these actions.

The Regents support the Governor's request for funding for the State's International Partnership Program and invite all higher education institutions to submit proposals for participation in this program by such means as research or scholarly exchange with foreign universities, or consultation with New York State firms that establish contacts with foreign firms through the program.

The International Partnership Program does not appear to be moving in directions that would permit such activity. However, staff are participating in the Governor's Global New York initiative through committees seeking to address these issues.

To improve the transmission of data between postsecondary institutions and the Department, the Regents will seek funding to support systems for electronic transmission of data for those colleges and universities that wish to do so.

It does not appear feasible to pursue this proposal at present, given the State's fiscal condition.

The Regents and the Department will develop a proposal to assist in the dissemination of the information on interinstitutional computerized networks which has been developed by institutions already experienced in such networks.

The development in recent years of NYSERNet and other high-speed telecommunication networks makes this proposal from the 1984 Plan no longer necessary.

The Regents enrollment projections are adopted for planning purposes. The Department will work closely with the institutions and the Division of the Budget to assure that activities necessary to bring about the assumed participation and retention patterns are developed and supported.

This Progress Report includes new enrollment projections, based on current data, that render obsolete the 1988 Plan's projections.